2026

Operational and Maintenance Manual

For Models: T25 & T26



ATS ShieldSafe®
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TITLE PAGE

ClimateRig T25 & T26 Cool-Down Trailer Owner's Manual

Manufactured by: ATS ShieldSafe® — Made in the USA

Manual Revision Date: April 2026

Important: Read this manual completely before operating the trailer. Failure to follow instructions and safety procedures may result in equipment damage, personal injury, or death.

Keep this manual with the trailer at all times.

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HOW TO USE THIS MANUAL

Understanding Signal Words

This manual uses signal words to identify hazards and important information. Learn the difference:

DANGER: Indicates an imminent hazard that WILL cause death or serious injury if you do not follow the instructions.

WARNING: Indicates a hazard that COULD cause death or serious injury if you do not follow the instructions.

CAUTION: Indicates a hazard that COULD cause minor or moderate injury if you do not follow the instructions.

NOTICE: Provides important information about property damage or non-injury hazards.

Chapter Organization

Each chapter is organized to answer your immediate question:

- **Introduction sections** explain what the system does and why it matters
- **Numbered steps** tell you exactly what to do in order
- **Warnings** appear before hazardous procedures
- **Checklists** help you verify that tasks are complete
- **Diagrams and photos** show you what to look for

Getting Started

We recommend you:

1. **Read Chapter 2 (Safety Information)** first. It covers hazards and how to protect yourself and others.
2. **Read Chapter 4 (Setup & Installation)** before you use the trailer for the first time.
3. **Skim Chapter 9 (Warranty & Service)** to understand what is covered and how to file a claim.
4. **Keep this manual in an easy-to-reach location** inside or near the trailer. You will need it for maintenance schedules, troubleshooting, and emergency procedures.

Using Cross-References

Throughout this manual, you will see references to other sections in the format "See Chapter 5: Operation." Follow these cross-references to find related information quickly.

Terminology

Technical terms and abbreviations are defined in **Appendix E: Glossary of Terms**. If you encounter a term you do not recognize, check the glossary.

What This Manual Covers

This manual is the primary source of information for:

- Safe operation of the ClimateRig trailer
- Maintenance and inspection procedures
- Troubleshooting common issues
- Towing and transport requirements
- Warranty terms and service procedures
- Compliance with applicable regulations

What This Manual Does Not Cover

For information not covered in this manual (such as detailed towing vehicle specifications or generator compatibility), contact:

ATS ShieldSafe Customer Service

Phone: 1-800-747-9953 (24 hours a day, 7 days a week)

Email: Support@ClimateRig.com Website: climaterig.com

Updates & Corrections

If you find an error or have a suggestion for improving this manual, please contact ATS ShieldSafe. Your feedback helps us serve you better.

IMPORTANT: Always keep this manual with the trailer. Refer to it regularly. Your safety and the safety of others depends on proper use and maintenance of the ClimateRig.

Chapter 1: Introduction & Product Overview

1.1 Welcome to ClimateRig

Welcome to the ClimateRig family. You have invested in a premium, mobile heat-management solution engineered to protect your workforce in harsh environments. The **ClimateRig Cool-Down Trailer** is a purpose-built piece of safety equipment that delivers reliable cooling, durable construction, and the peace of mind that comes from knowing your team has immediate access to a climate-controlled rest space.

Whether you operate construction sites, oil and gas facilities, utility work zones, emergency response operations, or other outdoor labor environments, the ClimateRig is designed to meet OSHA heat-stress management guidelines and keep your workers safe, productive, and protected from heat-related illness.

This manual provides everything you need to set up, operate, maintain, and troubleshoot your ClimateRig. Read it thoroughly before your first use, and refer to it frequently. Proper operation and maintenance ensure your ClimateRig delivers maximum performance and longevity for years to come.

1.2 Product Description & Key Features

The ClimateRig Difference

The ClimateRig is not a standard air-conditioned shelter. It is a purpose-engineered trailer built on a **patented CellTech™ all-steel platform** and outfitted with professional-grade climate-control systems. Every component—from the frame to the electrical panel—has been selected and integrated to deliver durability, reliability, and compliance with occupational safety standards.

Key design advantages include:

- **All-Metal, Anti-Corrosion Construction:** No wood frame or wooden-core panels. The ClimateRig uses patented **CellTech™ technology** featuring all-steel skins and a structural adhesive core, ensuring your ClimateRig resists rot, mildew, rust, and deterioration even in the harshest climates.
- **Dual Climate-Control System:** Two independent **Fogatti InstaCool Ultra** air conditioning units provide a combined 32,000 BTU cooling capacity and 25,000 BTU heating capacity. This non-evaporative A/C design works reliably in humid climates where evaporative coolers fail.
- **17 Patents in Design:** The ClimateRig incorporates 17 design patents, reflecting years of engineering innovation and field experience.
- **Capacity for 18 Workers:** Full-length bench seating and 128 square feet of climate-controlled interior space allow up to 18 workers to rest and recover simultaneously.
- **Half-Ton Towable:** At approximately 2,500 lbs dry weight, the ClimateRig can be towed by standard pickup trucks—no special CDL, no heavy-equipment hauler required.
- **Fast Setup:** Deploy the ClimateRig in minutes. Level the trailer on stable ground, connect a standard 30-amp power inlet, and the cooling system is ready to operate.
- **10-Year Panel & Frame Warranty:** CellTech Metals backs its proprietary panel technology and galvanized frame with an industry-leading 10-year warranty against material defects, workmanship failures, and delamination.

1.3 Model Identification (T25 & T26)

The model designation **T25 & T26** indicates the ClimateRig's exterior footprint: **7 feet wide × 21 feet long** with an enclosed interior of 128 square feet. This compact size balances substantial worker capacity with towability and maneuverability on active job sites.

Finding Your Serial Number & Model Information

Your ClimateRig carries a **Vehicle Identification Number (VIN)** and serial number permanently affixed to the frame and interior documentation. This information is critical for:

- Warranty registration and claims
- Parts ordering
- Service records
- Compliance verification

Location: The VIN plate is attached to the main frame rail on the street side, near the front bottom of the trailer. Record this information immediately:

Information	Location
VIN / Serial Number	Frame data plate (street side, near front bottom)
Model Code	T26 (7' × 21' footprint)
Manufacturer	ATS ShieldSafe
Base Trailer Manufacturer	CellTech Metals
Date of Manufacture	(See VIN plate)

Table 1-1: Product Descrtiption

1.4 Intended Use & Applications

The ClimateRig is designed for heat-stress management in occupational settings where workers are exposed to extreme temperatures and high heat-stress indices. Your ClimateRig provides a controlled environment for worker rest, recovery, and acclimatization to heat.

Primary Applications

To Comply with OSHA Heat-Stress Protocols in:

- **Construction & Heavy Industries:** On-site rest and cooling for construction workers, ironworkers, heavy equipment operators, and general laborers
- **Oil & Gas Operations:** Heat relief stations at drilling sites, pipeline work zones, and refinery facilities
- **Utility & Infrastructure Work:** Power-line crews, telecommunications maintenance, water/sewer construction
- **Emergency & Fire Services:**
  Mobile cool-down and rehabilitation facility for incident command posts and mass-casualty scenarios (aligned with NFPA 1584 guidance)
- **Mining & Extraction:** Heat management for underground and surface mining operations
- **Industrial Facilities:** Manufacturing plants, foundries, and other high-heat production environments
- **Government & Municipal Services:** Public works departments, disaster response, and emergency preparedness

Intended User Profile

The ClimateRig owner/operator is expected to:

- Read and understand this manual before deploying the trailer
- Have basic mechanical and electrical competency (or access to qualified technicians)
- Follow all setup, operation, and maintenance procedures
- Comply with applicable OSHA, state, and local heat-safety regulations
- Maintain appropriate insurance and liability coverage
- Report any defects or safety concerns to the manufacturer

1.5 Specifications Table

The following table summarizes key physical, electrical, climate-control, towing, and warranty specifications for your ClimateRig. For detailed information on any specification, refer to the relevant chapter in this manual.

Physical Specifications

Specification	Value	Notes
Model	ClimateRig T26	ATS ShieldSafe
Base Trailer	CellTech 7×21 Enclosed	Patented all-steel panel technology
Exterior Dimensions	7' wide × 21' long	Standard industrial container footprint
Interior Footprint	128 sq ft	Climate-controlled space for worker rest
Interior Height	~7–8 feet	(Verify with local conditions; subject to trailer trim and add-ons)
Dry Weight	~2,500 lbs	Unladen, without liquids or cargo
Material Construction	All-steel panels + galvanized frame	No wood. Hot-dip galvanized 80ksi steel.
Panel Technology	CellTech™ proprietary	All-steel skins with structural adhesive core; prevents moisture entrapment
Exterior Finish	Galvanized + weatherproof sealing	Aerodynamic dimpled-face design reduces wind drag
Frame Design	4" double-tube main rail, 16" OC cross-members	Robust strength and integrated E-track system

Table 1-2: Physical Spec

Climate-Control System

Specification	Value	Notes
A/C Unit Type	Fogatti InstaCool Ultra (×2)	Rooftop-mounted, non-ducted design
Cooling Capacity	32,000 BTU total	16,000 BTU per unit
Heating Capacity	25,000 BTU total	12,500 BTU per unit (heat pump function)
Heating Operating Range	23°F to 75°F outdoor	Heat pump efficiency decreases below 35°F
Refrigerant	R32	Low-GWP, high-efficiency. Mildly flammable; sealed system.
Total Airflow	~836 CFM	418 CFM per unit (dual-motor, triple-fan system)
Noise Level	43 dB	Ultra-quiet operation
Cooling Speed	~4 minutes	Manufacturer-stated time to feel temperature change
A/C Control Methods	Remote, per-unit control panel, WiFi app	Each A/C unit has its own control panel; auto-oscillation 0–85°
Optional Heater	2,000-watt forced-air heater	Year-round worker protection (not available in C1D2 config)

Table 1-3: Climate Control

Electrical System

Specification	Value	Notes
Primary Power Inlet	L14-30P (NEMA 14-30)	Twist-lock, 125/240V, 30A rating
Inlet Location	Exterior bulkhead panel	Weather-sealed connector
Power Cord (Included)	20-foot L14-30 extension cord	12 AWG, weather-rated
Main Panel	Square-D QO series, 100A capacity	120/240V AC, single-phase
A/C Unit Circuits	2 × 20A breakers	12 AWG THHN wire, one per unit
A/C Current Draw	15.5A per unit (total ~16A)	NEC-compliant dual-circuit design
GFCI Breaker	15A GFCI	Protects lighting circuit and optional USB outlets
Interior GFCI Receptacles	8 × GFCI outlets (optional)	Connected via MOLEX connector
USB Charging Stations	2 × 12V USB outlets (optional)	Powered through 12VDC power supply
Heater Circuit	1 × 20A 2-pole breaker (240 VAC)	Optional; installed with 2,000W forced-air heater
Interior Lighting	4 × 480-lumen LED domes + 1 × 630-lumen porch light	All LED; low power draw; durable
Backup Power Supply	12V DC auxiliary	Powers controls and low-voltage accessories
Grounding	10 AWG stranded copper, multi-terminal ground bar	NEC-compliant bonding throughout

Table 1-4: Electrical System

Worker Capacity & Interior

Specification	Value	Notes
Maximum Occupancy	18 workers	Design capacity for simultaneous rest/recovery
Seating	2 full-length bench seats	~1,600 lbs capacity each
Floor Space	128 sq ft, non-skid surface	Comfortable seating and circulation
Windows	6 units, fire-retardant polycarbonate twin-sheeting	Interior visibility; safety glazing
Rear Door	32" wide × 82" tall, hinged with integrated step	Primary entry/exit with manual latch
Front Emergency Exit	Separate emergency exit door	Rapid evacuation capability
Ventilation	Active (A/C circulation) + passive airflow	Integrated with rooftop vent design

Table 1-5: Product Descrtiption

Towing & Transport

Specification	Value	Notes
Towing Rating	Half-ton pickup truck	Standard Class II hitch
Hitch Type	2-5/16" ball, 5-position adjustable weld-on coupler	15,000 lbs rated capacity
Tongue Weight (Est.)	250–375 lbs	~10–15% of dry weight
Light Connector	7-pin, standard trailer + electric brake	DOT-compliant signal/brake circuit
Axles	2 × 3,500 lb Dexter tandem	7,000 lbs total GAWR, electric brakes
Suspension	Electric-brake tandem suspension	Smooth ride; safe deceleration
Stabilizer Jacks	4 × manual screw-down leveling jacks	~300 lbs lift capacity each (est.)
DOT Compliance	Meets all Department of Transportation requirements	Safe towing, lighting, braking standards

Table 1-6: Transport

Warranty Coverage

Component	Coverage Period	Key Details
CellTech Panels	10 years	Material, workmanship, delamination. Covers walls, roof, floor.
Galvanized Frame	10 years	From ship date. Hot-dip galvanized steel.
Dexter Axles	5 years	Dexter manufacturer warranty.
A/C & Electrical	2 years	Air conditioners, breakers, interior lighting.
Additional Components	1 year	Doors, windows, hinges, trim, lighting, tracks.
Paint	5 years (pro-rata)	Cost sharing between ATS ShieldSafe and customer.

Table 1-7: Warrenty

Warranty Notes:

- Applies to first retail customer only; non-assignable
- Repairs or replacement at ATS ShieldSafe's option
- Customer responsible for transportation costs to service location
- See Chapter 9 (Warranty & Service) for complete terms and exclusions

Optional Configurations

The ClimateRig is available in multiple configurations to suit specialized applications. The standard configuration described above includes dual Fogatti InstaCool Ultra units and standard electrical outlets. Optional upgrades include:

Option	Description	Notes
C1D2 Hazardous Location	UL-listed equipment for Division 2 hazardous atmospheres	Requires two C1D2 A/C units (23.7K BTU combined); modified electrical
Power Bank Upgrade	Multi-port USB + USB-C charging with fast-charge capability	Standard 110V outlets + enhanced mobile charging
Generator (8kW Generac)	Tongue-mounted, hard-wired generator for autonomous operation	Eliminates dependence on on-site power; not available with C1D2 config
ClimateRig Heat (2kW)	Forced-air heater for cold-season operation	Year-round worker protection; not available with C1D2 config

Table 1-8: Configurations

1.6 Regulatory Compliance Overview

Your ClimateRig is engineered to support compliance with occupational heat-safety regulations, including OSHA's proposed heat-illness prevention standard and NFPA 1584 emergency-services guidance. The ClimateRig meets all Department of Transportation towing requirements and is compatible with state-specific heat-safety regulations.

For detailed regulatory guidance, see Chapter 10: Regulatory Compliance.

1.7 How This Manual Is Organized

This manual is organized as follows:

- **Chapter 2: Safety Information** — Critical hazards, signal words, and general safety precautions
- **Chapter 3: Receiving & Inspection** — Delivery checklist and initial setup
- **Chapter 4: Setup & Installation** — Site preparation, leveling, electrical connection, pre-operation checks
- **Chapter 5: Operation** — Daily use, temperature control, capacity management, emergency procedures
- **Chapter 6: Maintenance** — Routine maintenance schedules, A/C service, cleaning, seasonal storage
- **Chapter 7: Troubleshooting** — Common problems, diagnostic tables, when to call service
- **Chapter 8: Towing & Transport** — Tow-vehicle requirements, hitch setup, pre-tow checklist, driving guidelines
- **Chapter 9: Warranty & Service** — Warranty coverage, claim procedures, parts ordering, service network
- **Chapter 10: Regulatory Compliance** — OSHA, NFPA, DOT, Cal/OSHA, and state-specific requirements
- **Appendices** — Complete specs table, wiring diagrams, parts lists, maintenance logs, glossary, contacts

Read Chapter 2 (Safety Information) and Chapter 4 (Setup & Installation) before your first deployment.

Chapter 2: Safety Information

The ClimateRig is a powerful climate-control tool designed to help prevent heat-stress injuries and improve worker safety on job sites. However, like all mechanical and electrical equipment, the ClimateRig presents hazards if not operated and maintained correctly. This chapter explains those hazards and how to avoid them.

Read this chapter carefully before operating the trailer. Keep this manual with the trailer at all times. Train all workers and operators on the safety information in this chapter before using the ClimateRig.

2.1 Safety Signal Words

This manual uses four signal words to alert you to hazards. Each word tells you how serious the risk is:

DANGER — Imminent Hazard

DANGER: means a hazardous situation that will cause death or serious injury if you don't avoid it.

Example: High-voltage electrical winteri from a live power inlet.

WARNING — Potential for Serious Injury

WARNING: means a hazardous situation that could cause death or serious injury if you don't avoid it.

Example: Carbon monoxide poisoning from a generator running in an enclosed space.

CAUTION — Potential for Minor or Moderate Injury

CAUTION: means a hazardous situation that could cause minor or moderate injury if you don't avoid it.

Example: Bruising or a cut from stepping on a stabilizer jack.

NOTICE — Important Information

NOTICE: provides important information about property damage or safe operation. It does not indicate an injury risk.

Example: Proper ventilation is needed to protect the A/C system from dust damage.

Each warning in this manual uses one of these signal words. Always follow the instructions in every warning, regardless of the signal word used.

2.2 General Safety Precautions

Operate the ClimateRig responsibly. The following precautions apply to all uses:

Training and Supervision

- **Designate an Operator.** One person should be responsible for setup, operation, and basic maintenance of the ClimateRig at your job site.
- **Train All Workers.** Before any worker enters the trailer, inform them about the emergency exits, the 18-worker maximum capacity, and basic operating rules.
- **Supervise Children.** Do not allow children to operate the ClimateRig or to play inside without adult supervision. Do not permit children to access electrical connections, refrigerant lines, or any mechanical components.
- **Restrict Unauthorized Access.** Do not permit untrained or unauthorized persons to operate, service, or modify the ClimateRig.

Modification and Repair

- **Never Modify the ClimateRig.** Do not alter, remove, or bypass any component—including electrical systems, safety devices, panels, doors, or climate-control equipment.
- **Use Qualified Technicians Only.** Any repair, adjustment, or maintenance (beyond routine cleaning and inspection) must be performed by a qualified technician certified by the equipment manufacturer.
- **Contact Authorized Service.** If service is needed, contact ATS ShieldSafe or an authorized dealer. Unauthorized repairs may void the warranty and create safety hazards.
- **Replace Damaged Parts.** If any structural panel, door, window, hinge, or electrical component is damaged, repair or replace it before operating the trailer.

Documentation

- **Keep This Manual.** Store this manual in a waterproof container inside or mounted on the ClimateRig. Refer to it whenever you have questions about operation, maintenance, or safety.
- **Register the Trailer.** Complete the product registration (see Chapter 9) so you receive warranty support and critical safety updates.
- **Maintain a Service Log.** Record all maintenance performed on the ClimateRig, including dates, work done, and the technician's name (see Appendix D for a maintenance log template).

General Hazard Awareness

- **Inspect Before Each Use.** Check for loose panels, damaged doors, cracks in windows, or any other visible damage. Do not operate a damaged trailer.
- **Use on Level Ground.** Always position the ClimateRig on stable, level ground. Never operate it on a slope or soft ground that may shift or sink. Lower the rear stabilizer jacks until level side-to-side and front-to-back, then lower the front hitch jack about 1 degree (1–2 turns) so A/C condensate water drains off the front of the roof, away from the rear entry door. Then engage all four stabilizer jacks.
- **Use All Stabilizer Jacks.** The ClimateRig is equipped with four manual screw-down stabilizer jacks. Deploy and lock all four jacks before permitting workers to enter. This prevents tip-over and keeps the trailer stable.
- **Chock the Wheels.** Place wheel chocks on both sides of at least one tire any time the ClimateRig is unhitched or parked for use. Wheel chocks prevent the trailer from rolling, even on surfaces that appear level.
- **Avoid High Winds.** Do not enter or exit the trailer during high winds or severe weather. Close doors firmly and ensure all roof equipment is secure.
- **Keep the Interior Clean.** Remove trip hazards, spilled fluids, and debris from the interior floor. Keep exits clear at all times.

2.3 Electrical Safety

The ClimateRig uses 120/240V AC electrical power from a generator, shore power, or other external source. Electricity can cause serious injury or death if you contact it. Follow all electrical safety precautions.

Power Inlet and Cord Safety

DANGER: Electrical Shock Hazard

Hazard: The L14-30 power inlet accepts 120/240V AC at 30 amps. Contact with live conductors can cause electrocution, severe burns, or death.

How to Avoid It:

- Never touch the power inlet or power cord if it is wet or damaged.
- Do not operate the ClimateRig in heavy rain or standing water without adequate grounding and protection.
- Before connecting the power cord, ensure the external power source (generator or shore power) is properly grounded and the breaker is OFF.
- Do not modify, repair, or splice the power cord. If the cord is damaged, replace it with an approved L14-30 extension cord (12 AWG, 20 feet, as specified in the parts list).
- Do not use any other type of power cord or adapter.
- Keep the power inlet dry. If water enters the inlet, disconnect immediately and contact a qualified electrician before reconnecting.
- Never pull on the power cord to disconnect it from the inlet. Grasp the connector body firmly and twist counterclockwise to remove it.

Grounding and Bonding

WARNING: Electrical Shock from Improper Grounding

Hazard: If the ClimateRig is not properly grounded, exposed metal parts (frame, roof, door latches, benches) may become energized in the event of an electrical fault, increasing the risk of shock.

How to Avoid It:

- Ensure the external power source (generator or shore power) provides proper grounding. If using a generator, the generator must have a bonded neutral and ground connection per NEC standards.
- Do not defeat or modify the ground connection. The power cord's ground conductor (green wire) must connect directly to the ClimateRig's main ground bar.
- If you have any doubt about grounding, contact a licensed electrician before operating the trailer.
- If you notice a tingle, shock, or burning smell from any metal part of the trailer, disconnect the power immediately and do not reconnect until a qualified electrician has inspected the grounding system.

Breaker and Overload Protection

CAUTION: Electrical Overload

Hazard: The ClimateRig's electrical panel contains two 20A breakers for the A/C units. A 15A GFCI breaker protects the lighting circuit and optional USB outlets. If the optional 2,000W forced-air heater is installed, one additional 20A 2-pole breaker is present (providing 240 VAC to the heater). If a circuit draws too much current, the breaker will trip to prevent fire and equipment damage. Attempting to bypass or reset a tripped breaker without fixing the underlying problem can cause fire or equipment damage.

How to Avoid It:

- If a breaker trips, turn OFF all devices on that circuit and wait 5 minutes before attempting to reset it.
- Reset a breaker by switching it fully OFF, then switching it back ON.
- If a breaker trips repeatedly, do not operate the trailer. Contact a qualified electrician to identify and repair the fault.
- Do not plug in high-demand devices (power tools, space heaters, heavy-load equipment) into the ClimateRig's outlets unless authorized by your supervisor. The outlet circuit serves charging stations and basic accessories only.

Wet-Environment and GFCI Protection

WARNING: Shock Risk in Wet Conditions

Hazard: The ClimateRig is used on job sites with moisture from sweat, humidity, rain, or water sources. Wet conditions greatly increase the risk of electrical shock.

How to Avoid It:

- The lighting circuit and optional USB outlets are protected by a 15A GFCI (ground-fault circuit interrupter) breaker, which detects ground faults and cuts power in milliseconds. If the optional GFCI receptacles are installed, they provide additional ground-fault protection at each outlet.
- Do not rely on GFCI protection alone. Always assume that electrical contacts in wet conditions are hazardous.
- Do not operate electrical devices with wet hands. Dry your hands before touching power cords, outlets, or the control panel.
- If the GFCI breaker trips, disconnect all devices from the outlets, dry the area, and reset the breaker. If it trips again, contact a qualified electrician.
- Never use extension cords outdoors unless they are rated for wet locations (marked "W" or "WET").

Internal Wiring and Panel Access

DANGER: Electrical Shock from Internal Wiring

Hazard: The ClimateRig's electrical panel contains live conductors and energized equipment even when breakers appear to be OFF. Contact with internal wiring can cause electrocution.

How to Avoid It:

- Do not open the electrical panel door unless you are a qualified electrician.
- Do not attempt to modify, bypass, or repair any internal wiring or breaker.
- Do not touch the main power inlet while the external power source is connected, even if breakers are OFF. The inlet itself carries live voltage.
- If you must work on the electrical system, disconnect the power cord first and verify that all live circuits are de-energized with a qualified test instrument.
- Contact an authorized technician for any electrical service or troubleshooting.

Proper Electrical Setup Checklist

Before connecting power to the ClimateRig:

1. Place the ClimateRig on stable, level ground, deploy all four stabilizer jacks, and chock the wheels.
2. Ensure the external power source (generator or shore power) is grounded per NEC standards.
3. Visually inspect the 20-foot power cord for cuts, cracks, or damage. Do not use a damaged cord.
4. Verify that all breakers in the ClimateRig's electrical panel are in the OFF position.
5. Connect the L14-30 power cord to the ClimateRig's inlet by inserting the plug and twisting clockwise until snug.
6. Verify that the external power source is operating and properly grounded.
7. Switch breakers ON one at a time: A/C Unit #1, wait 10 seconds, then A/C Unit #2, then Lights/Accessories. Staggering A/C startup smooths out inrush current.
8. Verify that the A/C units are running and each unit's control panel displays normally.

2.4 Towing Safety

The ClimateRig weighs approximately 2,500 pounds empty and is rated for towing by a half-ton truck. Towing requires careful setup and driving practices. Improper towing can cause loss of control, trailer detachment, or vehicle rollover.

Tow Vehicle Requirements

WARNING: Inadequate Tow Vehicle Capacity

Hazard: Towing with an undersized or improperly equipped vehicle can cause the vehicle to lose control, especially on grades or during emergency braking.

How to Avoid It:

- Use only a vehicle rated for at least 5,000 lbs. of towing capacity (to accommodate the ~2,500 lb. ClimateRig plus a margin for braking loads).
- Verify your vehicle's towing capacity in the owner's manual or from the vehicle manufacturer. Do not estimate or assume.
- Use a vehicle equipped with an integrated trailer brake controller if electric brakes are present on the ClimateRig (which they are).

- Ensure the vehicle's hitch is class II (1,500 lbs. capacity) or higher and is properly rated for a 2-5/16" ball.
- Do not tow the ClimateRig with a vehicle that lacks proper braking, suspension, or steering control.

Hitch and Coupler Setup

DANGER: Trailer Detachment

Hazard: If the hitch or safety chains are not properly connected, the trailer may detach from the tow vehicle during transit, causing the trailer to veer into traffic or off the road.

How to Avoid It:

- The ClimateRig uses a 2-5/16" ball hitch and a 5-position adjustable coupler, rated for 15,000 lbs.
- Before towing, verify that the hitch ball is securely mounted to the tow vehicle's frame and the ball size matches the coupler (2-5/16").
- Back the tow vehicle slowly so the coupler slides over the hitch ball. Stop when the coupler is centered on the ball.
- Lower the coupler latch fully onto the hitch ball.
- Verify that the latch is closed and the safety pin (if present) is inserted through the latch.
- Check that the coupler does not wiggle or slide on the ball. If it does, the ball size or coupler may be damaged.

Safety Chains and Breakaway System

WARNING: Trailer Detachment from Chain Failure

Hazard: The ClimateRig is equipped with safety chains that serve as a backup if the coupler separates from the hitch ball. If chains are not connected or are damaged, the trailer could detach.

How to Avoid It:

- Two safety chains are attached to the ClimateRig's frame near the coupler. Both chains must be connected to the tow vehicle's frame or hitch before moving.
- Cross the chains (X-pattern) under the coupler tongue. This prevents the tongue from dropping to the road if the coupler separates.
- Connect the chains using the provided hooks or fasteners. Ensure they are tight and cannot slip.
- Verify that the chains have no more than 12 inches of slack when the coupler is seated on the hitch ball.
- Inspect the chains before each tow. Replace any chain that is cracked, broken, or rusted through.
- The ClimateRig has a breakaway switch and battery-powered brake solenoid. Verify that the breakaway switch is armed and the battery is charged. Test the system per manufacturer instructions before towing.

Lighting and Signal Requirements

CAUTION: Inadequate Visibility

Hazard: If the ClimateRig's tail lights, brake lights, or turn signals are not working, other drivers may not see the trailer, increasing the risk of a collision.

How to Avoid It:

- The ClimateRig is equipped with a 7-pin trailer connector (standard lighting and brake signal).
- Connect the 7-pin connector to the tow vehicle's matching connector before towing.
- Verify that all tail lights, brake lights, and turn signals illuminate when the tow vehicle's lights or turn signals are activated.
- If any light is dim or dark, check the connector for corrosion or loose contacts. Clean or reconnect as needed.
- If lights still do not work, stop and contact a qualified technician before towing.
- The ClimateRig must have a working white light on the trailer's rear license plate area and rear reflectors (red and white) for nighttime visibility.

Tires

WARNING: Tire Age and Sun Rot

Hazard: Trailer tires degrade from UV exposure and age regardless of tread depth.

How to Avoid It:

- Inspect sidewalls for cracking, bulging, or checking before every tow.
- Replace all tires no later than five years from the date of manufacture, even if tread appears adequate. The manufacture date is stamped on the sidewall as a four-digit DOT code — the last four digits indicate the week and year of production (e.g., 2322 means the 23rd week of 2022).

Pre-Tow Inspection Checklist

Before each tow:

1. Verify the tow vehicle's hitch is rated for at least 5,000 lbs. of towing capacity.
2. Ensure the hitch ball is securely bolted to the tow vehicle and matches the 2-5/16" coupler.
3. Check that the coupler is latched firmly onto the hitch ball and the safety pin is inserted.
4. Verify that both safety chains are connected to the tow vehicle's frame and crossed under the coupler tongue.
5. Test all trailer lights (tail, brake, turn signals) by connecting the 7-pin connector and activating the tow vehicle's lights.
6. Inspect the power cord (if stored on the trailer) to ensure it is secured and will not drag on the road.
7. Deploy all four stabilizer jacks on the ClimateRig if the trailer will be stationary for more than a few minutes during transport setup.
8. Ensure all cargo and interior items are secured or removed.
9. Walk around the entire trailer and visually inspect for loose panels, damaged windows, or other damage.
10. Verify that the ClimateRig's rear door is fully latched and locked before towing.

Safe Towing Practices

- **Drive Smoothly.** Accelerate, decelerate, and turn gradually. Sudden movements can cause the trailer to sway or tip.
- **Observe Speed Limits.** Do not exceed posted speed limits. Towing a trailer increases stopping distance; drive at or below the speed limit.
- **Check Mirrors Frequently.** Use your side mirrors to watch the trailer. If it begins to sway, do not brake abruptly. Ease off the throttle and steer gently to regain control.
- **Increase Following Distance.** Allow at least 8 seconds of space between your tow vehicle and the vehicle ahead (not the standard 3 seconds for a car).
- **Use Extra Caution on Hills.** On upgrades, downshift to a lower gear and increase engine RPM to maintain speed without excessive brake use. On downgrades, downshift and use gentle braking to control speed. Do not rely on the trailer brakes alone.
- **Avoid Jackknifing.** If you must back the trailer, do so slowly and carefully. Have a spotter outside the vehicle to guide you. Sharp backward turns at speed can cause the trailer to swing outward and hit obstacles.
- **Park on Level Ground.** When stopped, deploy all four stabilizer jacks, chock the wheels, and ensure the parking brake and transmission are engaged on the tow vehicle.

2.5 Carbon Monoxide Hazards (Generator Use)

If you use a gasoline or diesel generator to power the ClimateRig, the generator produces carbon monoxide (CO), a colorless, odorless gas that can cause serious injury or death. Never run a generator in an enclosed or partially enclosed space.

Understanding Carbon Monoxide

Carbon monoxide is produced by any fuel-burning engine: gasoline generators, diesel generators, and internal combustion engines. CO is absorbed rapidly through the lungs into the bloodstream, where it binds to hemoglobin and prevents oxygen from being carried to the brain and heart. Even low concentrations can cause illness within minutes. High concentrations cause death within minutes.

Symptoms of CO poisoning include:

- Headache
- Dizziness
- Weakness
- Nausea and vomiting
- Chest pain
- Confusion

If someone shows these symptoms while a generator is running, move them immediately to fresh air and call emergency services.

DANGER: CARBON MONOXIDE HAZARD

Generator exhaust may contains carbon monoxide (CO)

ALWAYS have an operational CO detector when a generator is in use.

• Death or serious injury may occur. • Test CO detector regularly. • Keep generator well maintained.

Generator Placement and Ventilation

DANGER: Carbon Monoxide Poisoning

Hazard: Running a generator inside, under, or near the ClimateRig will cause carbon monoxide to accumulate in the enclosed trailer space. Workers will breathe CO and can become poisoned within minutes, losing consciousness and dying.

How to Avoid It:

- **Never run a generator inside the trailer.** Standalone generators must be placed outside, at least 20 feet away from the trailer and away from all windows and vents.
- **Never run a generator under a canopy, awning, or shelter attached to the trailer.** CO can be pulled into the trailer by air currents and vents.
- **Position the ClimateRig so the generator faces downwind.** Orient the trailer so the generator end (tongue) faces downwind, directing exhaust away from the trailer interior and away from workers. If using a standalone generator, position it downwind of the trailer.
- **Ensure adequate ventilation.** Even with the generator outside, ensure that fresh outdoor air can enter the trailer through vents or open windows and that stale air can exit. Do not seal the trailer completely.
- **Monitor CO levels.** Install a CO detector inside the ClimateRig and keep the alarm activated at all times when a generator is in use. If the alarm sounds, evacuate immediately and reposition the generator further away.

Front-Mounted Generator (Optional Configuration)

DANGER: Carbon Monoxide Poisoning from Front-Mounted Generator

Hazard: If your ClimateRig is equipped with the optional trailer extension and generator mounting system, the generator is mounted on the front tongue of the trailer — in closer proximity to the enclosed cabin than a standalone generator. This increases the risk of CO entering the trailer through vents, doors, or A/C intake.

Mandatory Precautions:

- **CO monitoring is required.** A functioning carbon monoxide detector must be installed inside the ClimateRig at all times when the front-mounted generator is in use. Do not operate the generator without an active CO monitor in place.
- **Use a CO Sense-equipped generator.** ATS ShieldSafe strongly recommends using a generator with CO Sense™ or similar automatic carbon monoxide shutoff technology. These generators detect dangerous CO levels in the surrounding area and automatically shut down the engine before CO reaches lethal concentrations.
- **Position the ClimateRig with the generator facing downwind.** Always orient the trailer so the tongue (generator end) faces downwind, directing exhaust away from the cabin, doors, windows, and A/C intakes.
- **Have a CO safety plan.** Before operating the front-mounted generator, establish a written CO safety plan that includes: CO detector placement and testing, generator orientation procedures, evacuation routes and assembly points, and emergency response steps if the CO alarm sounds.
- **Test the CO detector before each use.** Press the test button on the CO detector to verify it is functioning before starting the generator. Replace batteries or the detector unit as recommended by the detector manufacturer.

Generator Safety Precautions

- **Read the Generator Manual.** Understand the generator's startup, shutdown, fuel, and operation procedures before use.
- **Use a Generator with CO Sense Technology.** ATS ShieldSafe strongly recommends generators equipped with CO Sense™ or equivalent automatic CO shutoff. This technology provides a critical safety layer by shutting down the engine if dangerous CO levels are detected.
- **Have a CO Safety Plan.** Before deploying the ClimateRig with any generator (front-mounted or standalone), establish a CO safety plan that covers detector placement, generator positioning, evacuation procedures, and emergency contacts.
- **Inspect the Generator.** Before each use, check that the generator has no leaks, cracks, or damage. Verify that the fuel tank has adequate fuel.
- **Use the Correct Fuel.** Do not use old, stale, or contaminated fuel. Fuel degrades and can clog the engine or cause fires.
- **Cool the Generator Before Refueling.** Do not add fuel while the engine is hot. A hot engine can ignite spilled fuel.
- **Secure Fuel Storage.** Store gasoline or diesel in approved, labeled containers away from the trailer, sleeping areas, and ignition sources. Keep the container on a flat surface to prevent spilling.
- **Connect and Disconnect Safely.** Turn the generator OFF before connecting or disconnecting the power cord. After shutdown, wait 5 minutes before touching the connector to allow it to cool.

2.6 Heat-Stress Management Responsibilities

The ClimateRig is a powerful tool to help prevent heat-stress injuries, but **the trailer is not a substitute for a complete heat-illness prevention program.** Employers and workers using the ClimateRig have ongoing responsibilities to manage heat stress.

Employer Responsibilities

The employer is responsible for:

- **Heat-Illness Prevention Program.** Develop a written heat-illness prevention program that includes work schedules, hydration, rest, monitoring, and access to shade/cooling (the ClimateRig provides shade and cooling).
- **OSHA Compliance.** Comply with the OSHA General Duty Clause, which requires employers to provide a safe workplace free from recognized hazards that cause or are likely to cause death or serious physical harm. Heat stress is a recognized hazard.
- **OSHA Proposed Heat Standard.** As of the publication date of this manual, OSHA is finalizing a Heat Injury and Illness Prevention Standard. Monitor OSHA.gov for updates and ensure compliance once the rule is final.
- **Heat Monitoring.** Monitor weather and workers for signs of heat stress. Use the OSHA WBGT (Wet Bulb Globe Temperature) calculator at https://www.osha.gov/heat-exposure/wbgt-calculator to assess risk.
- **Hydration and Rest.** Provide workers with access to cool water (at least 1 quart per worker per hour) and frequent rest breaks in the ClimateRig or other cool area.
- **Training.** Train all workers on the signs and symptoms of heat illness, the importance of hydration and rest, and how to use the ClimateRig correctly.
- **Medical Attention.** If a worker shows signs of heat illness, stop work immediately, move them to a cool area (the ClimateRig), provide water, and call emergency services if symptoms worsen.

Worker Responsibilities

Workers using the ClimateRig should:

- **Recognize Heat-Illness Symptoms.** Know the signs of heat exhaustion (heavy sweating, weakness, dizziness, nausea, fast pulse) and heat stroke (hot, red, dry skin; confusion; loss of consciousness). Report symptoms to your supervisor immediately.
- **Use the ClimateRig Regularly.** Take breaks in the ClimateRig at least every 2 hours during hot weather, and more frequently if WBGT is high.
- **Stay Hydrated.** Drink water regularly before, during, and after work. Do not wait until you are thirsty.
- **Follow Work/Rest Ratios.** Obey your employer's work and rest schedules, especially on high-WBGT days. The ClimateRig supports these schedules by providing a cool rest area.
- **Report Equipment Problems.** If the A/C is not cooling, the doors will not close, or the ClimateRig is damaged, inform your supervisor immediately so repairs can be made.

Heat Monitoring and WBGT Guidance

The OSHA WBGT calculator helps employers assess heat stress risk. The calculator uses temperature, humidity, and solar radiation to compute WBGT in degrees Fahrenheit. Based on WBGT, recommended work/rest schedules change:

WBGT (°F)	Heat Risk	Recommended Action
<82	Low	Work normally with water breaks
82–87	Moderate	Increase rest breaks; use the ClimateRig every 2–3 hours
87–92	High	Frequent rest breaks; use the ClimateRig every 1–2 hours
>92	Very High	Limit work to short periods; frequent ClimateRig rest breaks; monitor closely

Table 2-1: WBGT

The ClimateRig supports these schedules by providing a dedicated cool-rest area. However, the ClimateRig does not replace hydration, work/rest schedules, or medical oversight.

2.7 Refrigerant Safety (R32)

The ClimateRig uses R32 refrigerant in its two air-conditioning units. R32 is an efficient, low-global-warming-potential refrigerant, but it has hazardous properties if mishandled.

Understanding R32

R32 is classified as **A2L** — a low-flammability refrigerant. This means:

- R32 is **mildly flammable** and will burn in the presence of an ignition source (open flame, hot surface, spark, or electrical arc).
- R32 is **non-toxic** at normal concentrations but can cause dizziness or headaches at very high concentrations.
- R32 refrigerant is **pressurized** inside the A/C units and refrigerant lines. A rupture will release pressurized refrigerant that can cause frostbite or explosions if an ignition source is present.

Refrigerant Storage and Transportation

WARNING: Flammable Refrigerant

Hazard: R32 refrigerant is flammable. If released, it can form a flammable vapor cloud. An ignition source (welding equipment, grinding, open flame, electrical spark) can cause an explosion or fire.

How to Avoid It:

- The ClimateRig's A/C units contain pressurized R32. Do not store, use, or transport the ClimateRig near open flames, welding equipment, or other ignition sources.
- Keep the ClimateRig at least 4 meters (13 feet) away from:
- Welding equipment or cutting torches
- Grinders or other spark-producing tools
- Open fires or smoking areas
- Electrical equipment with exposed hot surfaces or arcing
- Do not permit smoking near the A/C units or refrigerant lines.
- Do not allow hot work (welding, cutting, grinding) on the trailer frame or roof while the A/C units are installed.
- Store the ClimateRig indoors in a well-ventilated area with floor area ≥4 m^2 (approximately a 6.5' × 6.5' room or larger). This provides space for safe dissipation of refrigerant if a leak occurs.

Servicing and Repair of Refrigerant Systems

DANGER: Refrigerant Hazard

Hazard: Only certified HVAC technicians may service, repair, or recover R32 refrigerant. Untrained persons attempting to open refrigerant lines or remove A/C components can:

- Release pressurized refrigerant, causing frostbite or an explosion
- Create a fire or explosion hazard if the refrigerant mixes with air and encounters an ignition source
- Release refrigerant into the atmosphere, violating EPA regulations

How to Avoid It:

- **Do not attempt to repair A/C units yourself.** The Fogatti A/C manual states that installation, operation, adjustment, and repair must be performed by qualified technicians and certified professionals.
- **Contact a certified HVAC technician.** Any leak, strange noise, reduced cooling, or other A/C problem must be serviced by a professional certified to handle R32 refrigerant. Contact ATS ShieldSafe or an authorized dealer.
- **Do not pierce or burn refrigerant lines.** Do not drill, cut, or burn the A/C unit, refrigerant lines, or any pressurized component, as this will release pressurized refrigerant and create a fire/explosion hazard.
- **Do not attempt to recover refrigerant.** If R32 needs to be removed from the system, a certified technician must use an EPA-approved recovery machine and properly dispose of the refrigerant.

Signs of Refrigerant Leaks

If a refrigerant leak is suspected:

- **Reduced Cooling.** If the A/C stops cooling or cooling is very weak, refrigerant may be leaking.
- **Oil Stains.** R32 circulates with oil in the refrigerant lines. Look for oily residue or stains on the outdoor A/C unit or roof around the unit.
- **Hissing Sound.** A slow hiss near the A/C unit during operation may indicate a leak.
- **Visible Cracks or Damage.** Inspect the A/C unit and refrigerant lines for dents, cracks, or abrasions.

If you suspect a leak: Do not attempt to repair it yourself. Shut down the A/C system, move the ClimateRig away from ignition sources, and contact a certified HVAC technician or ATS ShieldSafe immediately.

2.8 Additional Hazards and Safety Information

Structural Integrity and Tip-Over Prevention

WARNING: Trailer Tip-Over

Hazard: The ClimateRig is a tall structure (~7' wide, 21' long, estimated 6–8' tall). If placed on uneven or soft ground, or if workers lean on side panels or climb on the roof, the trailer can tip over, causing injury or death.

How to Avoid It:

- **Always use all four stabilizer jacks.** The ClimateRig is equipped with four manual screw-down stabilizer jacks mounted at the corners of the frame. Before workers enter, fully deploy and tighten all four jacks. Lower the jacks until the trailer is level and stable.
- **Chock the wheels.** Place wheel chocks on both sides of at least one tire before workers enter. Stabilizer jacks alone do not prevent rolling.
- **Use a level.** Bring a simple bubble level or use a smartphone level app. Lower the rear stabilizer jacks until the trailer is level side-to-side and front-to-back. Then lower the front hitch jack about 1 degree (1–2 turns) so A/C condensate water drains off the front of the roof, away from the rear entry door. Then engage all four stabilizer jacks.
- **Never place the trailer on soft ground.** Do not set the ClimateRig on sand, mud, loose dirt, or other unstable surfaces. The jacks' feet can sink, causing the trailer to list or tip. If soft ground cannot be avoided, place plywood or steel plates under the jack feet to distribute the load.
- **Do not overload or concentrate weight on one side.** The interior benches are rated at 1,600 lbs. each. Do not exceed the maximum occupancy of 18 workers.
- **Do not use the roof as a work platform.** The roof is rated for less than 350 lbs and is intended only for brief, single-person maintenance access — not prolonged foot traffic or storage. Before accessing the roof, confirm the trailer is on firm, level ground with all four stabilizer jacks fully engaged. Climb only when the roof surface is clean and dry. Do not place tools, materials, or equipment on the roof beyond what is needed for the immediate task. Climbing on or around the A/C units can damage the housing, refrigerant lines, and mounting seals, and creates a fall hazard. All rooftop maintenance must be performed by a qualified technician.
- **Do not lean on or push side panels.** Side panels are structural but are not designed to support concentrated loads. Do not lean against them forcefully or use them as anchors.

Door and Exit Safety

CAUTION: Pinch Hazard

Hazard: The ClimateRig has one or more doors with heavy hinges and latches. Hands and fingers can be pinched or crushed if caught between the door and frame.

How to Avoid It:

- **Keep fingers clear of the door gap.** When opening or closing doors, hold them by the handle and keep all body parts clear of the frame.
- **Use both hands.** Always use two hands when opening or closing heavy doors. Do not allow children to open doors unassisted.
- **Prop open if needed.** If you need both hands for another task, use a doorstop or wedge to hold the door open to prevent it from swinging closed unexpectedly.

Emergency Exit Requirements

WARNING: Emergency Exit Obstruction

Hazard: In the event of a medical emergency, fire, or equipment failure, workers must be able to exit the ClimateRig quickly. If exits are blocked, workers could become trapped.

How to Avoid It:

- **Never block exits.** Keep the rear door and emergency exit (if present) completely clear at all times. Do not store equipment, benches, or other items in front of exits.
- **Travel door bars — use lockouts.** If your ClimateRig is equipped with travel door bars, install the lockouts to prevent the door bars from being engaged while workers are inside. Travel door bars secured during occupancy will prevent doors from opening, creating a confined space and trapping workers inside. Verify that lockouts are in place before any worker enters the trailer.
- **Know the exits.** Before entering the trailer, workers should know where all exits are located and how to operate the door latches.
- **Emergency exit procedure.** In the event of a fire, medical emergency, or equipment failure, evacuate immediately through the nearest exit. Assist injured or panicked workers. Once outside, move at least 20 feet away from the trailer and call emergency services (911 in the U.S.).
- **Maximum occupancy:** Do not exceed 18 workers inside the trailer at any time. Overcrowding increases panic and slows evacuation in an emergency.

Lifting and Carrying Hazards

CAUTION: Back Injury from Lifting

Hazard: The ClimateRig contains heavy components (benches, A/C units mounted on the roof). Improper lifting technique can cause back strain, muscle tears, or herniated discs.

How to Avoid It:

- **Never lift alone.** Heavy items (such as benches) should be lifted by two or more workers.
- **Use proper lifting technique.** Keep your back straight, bend at the knees, and lift with your legs, not your back. Do not twist while lifting.
- **Use mechanical assistance.** For very heavy items, use a dolly, hand truck, or forklift rather than lifting by hand.
- **Do not attempt to lift the trailer by hand.** The ClimateRig weighs ~2,500 lbs. empty. Never attempt to lift, jack, or move the trailer without mechanical equipment and qualified technicians.

Fire Safety

NOTICE: Fire Safety

Information: While the ClimateRig is designed to be safe, fires can occur from electrical faults, generator failures, or external sources. Being prepared can save lives.

Fire Prevention and Response:

- **No smoking inside.** Do not permit smoking inside the ClimateRig or within 20 feet of the generator.
- **Electrical safety.** Follow all electrical precautions in Section 2.3 to prevent electrical fires.
- **Generator safety.** Keep generators at least 20 feet away and outside (see Section 2.5).
- **Fire extinguisher.** Station a fire extinguisher (rated for Class C electrical fires) at the entrance to the ClimateRig. Train workers on its use before an emergency occurs.
- **Evacuation.** In the event of a fire, evacuate immediately. Do not attempt to fight a large fire. Close the door behind you if safe to do so, and call 911.
- **Assembly point.** Establish a designated assembly point at least 100 feet from the trailer where workers should gather after evacuation.

Environmental and Corrosive-Environment Use

NOTICE: Warranty Exclusion in Corrosive Environments

Information: The ClimateRig is built with hot-dip galvanized steel and corrosion-resistant materials. However, use in highly corrosive environments (salt spray, harsh chemicals, acidic compounds) may void the warranty and reduce component lifespan.

Guidance:

- The CellTech frame warranty excludes exposure to strong acids, alkalis, chlorides (salt), bleach, ammonia, and sulfur compounds.
- If the ClimateRig is used near salt water, chemical facilities, or other corrosive sources, rinse the exterior with fresh water weekly to remove salt or chemical residue.
- Contact ATS ShieldSafe before using the ClimateRig in a highly corrosive environment to verify warranty coverage.

Summary: Key Safety Takeaways

1. **Read and follow this manual.** Keep it with the trailer and refer to it whenever you have questions.
2. **Never modify the trailer.** All repairs must be done by qualified technicians.
3. **Electrical safety is critical.** Treat all power connections as dangerous. Ensure proper grounding and never touch live circuits.
4. **Tow safely.** Use a properly equipped half-ton truck, secure the hitch and chains, and drive smoothly.
5. **Keep generators outside and away.** Never run a generator in, under, or near the trailer.
6. **Refrigerant is not a DIY job.** Only certified HVAC technicians may service A/C units.
7. **Deploy all stabilizer jacks and chock the wheels.** This prevents tip-over and rolling.
8. **Know your exits.** Train workers on emergency evacuation procedures before entering. If travel door bars are installed, verify lockouts are in place to prevent a confined space.
9. **Heat illness is a team responsibility.** Use the ClimateRig as part of a comprehensive heat-management program with hydration, rest, and monitoring.
10. **Report problems immediately.** If you notice damage, electrical issues, reduced cooling, or any safety concern, shut down the system and contact a technician.

This chapter provides an overview of the major hazards associated with the ClimateRig. Chapters 3 through 8 provide detailed procedures for setup, operation, maintenance, and towing. Always refer to the specific chapter relevant to your task and follow all warnings and instructions carefully.

Chapter 3: Receiving & Inspection

3.1 Damage Inspection

Perform a thorough visual inspection within 24 hours of delivery. Look for dents, cracks, missing parts, or any visible damage to the structure, components, and systems.

IMPORTANT NOTE — WARRANTY DEADLINE: You must report any manufacturing defects or shipping damage to ATS ShieldSafe within **10 days of receipt**. Failure to report damage within this window may void your warranty claim. See Section 3.2 for reporting procedures.

Exterior Inspection

1. **Walk completely around the trailer.** Check for:
   - Dents, cracks, or gouges in the steel panels
   - Rust or corrosion on the frame, axles, or hitch
   - Loose bolts, rivets, or fasteners
   - Damage to the polycarbonate windows (cracks, cloudiness, or discoloration)
   - Gaps or separation where panels meet the frame
   - Bent or damaged safety chains
   - Cracks or damage to the rear step
2. **Inspect the roof and A/C units.** Look for:
   - Loose mounting bolts or brackets around the A/C units
   - Dents or impact damage to the rooftop A/C housing
   - Damaged or loose conduit around electrical connections
   - Signs of water leakage or staining around the A/C roof penetrations
   - Missing screws or fasteners
3. **Check the doors and hatches.** Verify that:
   - Rear door opens and closes smoothly without binding
   - Front emergency exit door opens easily
   - All hinges are secure and rust-free
   - Door latches are in place and functional
   - Gaskets or seals around doors are intact (no cracks or deterioration)
4. **Examine the axles and suspension.** Look for:
   - Rust or grease leakage from Dexter axles
   - Bent or damaged axle shafts or spindles
   - Cracks in welds or suspension brackets
   - Uneven tire wear or low tire pressure
   - Missing brake connectors or wiring
5. **Inspect the hitch and coupler.** Check that:
   - 2-5/16" ball coupler is present and not damaged
   - Adjustable channel is secure and not bent
   - Safety chains are intact and properly attached
   - 7-pin light connector shows no cracks or corrosion
   - Tongue is straight and not warped
6. **Verify electrical inlet and wiring.** Examine:
   - L14-30P power inlet for cracks, discoloration, or loose connections
   - Extension cord connector at the inlet (should be twist-lock, weather-tight)
   - 20-foot extension power cord for cuts, abrasions, or exposed wires
   - Ground cable connections for corrosion or looseness

Interior Inspection

1. **Check the structural integrity.** Look for:
   - Gaps between panels or floor and walls
   - Water stains or discoloration on the ceiling or walls
   - Cracks in the all-steel panels
   - Loose rivets or fasteners inside
   - Rust spots on interior surfaces
2. **Inspect benches and seating.** Verify that:
   - Both full-length benches are secure and not bent
   - Seating surfaces are clean and undamaged
   - Bench bolts and brackets are tight
3. **Test all lights.** Turn on each light to confirm:
   - 4 × 9-inch dome lights illuminate (interior)
   - 5-inch porch light illuminates (above rear step)
   - All LEDs are present and working
   - Light fixtures are secure
4. **Check the A/C control panels.** Each Fogatti InstaCool Ultra unit has its own control panel. Examine both:
   - Panels are not cracked or damaged
   - Panels are securely mounted
   - All buttons and touch areas respond (test in pre-operation checklist — see Chapter 5)
5. **Inspect power outlets (if equipped).** If the optional Power Bank is installed, check all AC outlets and USB charging stations:
   - Outlets are present and not damaged
   - No cracks, discoloration, or loose covers
   - Test operation will occur in pre-operation checklist (Chapter 5)
6. **Check windows and ventilation.** Verify:
   - All 6 polycarbonate windows are clear and undamaged
   - No cracks, scratches, or haziness
   - Windows are secure in their frames
   - Interior air circulation is not obstructed

3.2 Reporting Damage

If you discover any damage, missing components, or defects during your inspection, report them to ATS ShieldSafe immediately. You have **10 days from receipt** to report manufacturing or workmanship defects and qualify for warranty coverage.

What to Document

When you find damage, record the following information:

1. **Date of discovery** and date trailer was received
2. **Detailed description** of what is damaged (e.g., "dent on street-side panel, 3 inches wide, near rear door")
3. **Part or component affected** (roof, panel, window, hitch, light, etc.)
4. **Photos or video** showing the damage clearly (take close-ups and wide shots)
5. **Serial number or VIN** of the trailer (see Section 3.3 for location)
6. **Delivery confirmation** — who delivered it and what date

How to File a Claim

1. **Contact ATS ShieldSafe:**
   - Phone: **800-747-9953**
   - Email: Include photos, damage description, VIN, delivery date, and your contact information
   - Hours: Monday–Friday, 8 AM to 5 PM Central Time
2. **Provide your documentation** (photos, written description, delivery paperwork)
3. **Wait for authorization.** ATS ShieldSafe will review your claim and either:
   - Authorize a repair at an authorized service location (you may be responsible for transportation costs)
   - Approve a replacement part to be shipped to you
   - Deny the claim if the damage is not covered (e.g., accident damage, abuse, improper storage)
4. **Keep all documentation** including photos, email confirmation, claim number, and correspondence until the issue is resolved.

Important Warranty Notes

- **Notice deadline:** Reports made after 10 days from receipt may be denied.
- **Shipping damage:** If the trailer was damaged in transit, consider filing a claim with the shipping carrier as well; this claim is separate from the ATS ShieldSafe warranty.
- **Transportation costs:** You are responsible for paying to transport the trailer to an authorized service facility for warranty repairs. ATS ShieldSafe covers the labor and parts.
- **Out-of-warranty repairs:** Damage that occurs after the warranty period requires payment for both labor and parts.

3.3 Serial Number & Registration

Every ClimateRig has a unique Vehicle Identification Number (VIN) and serial number. Registering your trailer with ATS ShieldSafe activates your warranty, enables future service, and ensures you receive safety updates.

Finding Your VIN and Serial Numbers

VIN Plate Location:

- The **VIN plate** is mounted on the street side of the frame, near the front bottom of the trailer. The plate is a metal tag with raised numbers.
- **Format:** The VIN is a 17-character alphanumeric code that uniquely identifies your trailer.

Alternative Location:

- If you cannot locate the VIN plate on the frame, check the interior electrical closure (roof area) or contact ATS ShieldSafe with your delivery date and invoice number; they can look up your VIN in their records.

Record Your VIN Here: Write your VIN in the space below for easy reference:

VIN: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

Why Register Your Trailer

Registering your ClimateRig provides:

1. **Warranty Activation:** Your 10-year panel and frame warranty, 5-year axle warranty, and 2-year electrical warranty start from the registration date. Without registration, warranty claims may be denied.
2. **Safety Alerts:** If ATS ShieldSafe or component manufacturers (like Fogatti or CellTech) issue a safety recall or service bulletin, you will be notified by email or phone.
3. **Parts & Service:** You can order genuine replacement parts and schedule service appointments online or by phone.
4. **Ownership Transfer:** If you sell the trailer, registration helps the new owner establish their own warranty record.

How to Register

1. **Online Registration** (Recommended):
   - Visit www.climaterig.com/register
   - Enter your VIN, purchase date, and contact information
   - Upload a copy of your bill of sale or delivery confirmation (optional, for verification)
   - Submit
2. **By Phone:**
   - Call **800-747-9953**
   - Provide your VIN, delivery date, and contact information
   - ATS ShieldSafe will register you in the system
3. **By Mail:**
   - Fill out the registration card included in your manual package
   - Mail to:

     ATS ShieldSafe
     601 West 6825 South
     Midvale, UT 84047
   - Include a copy of your delivery confirmation or invoice

Ownership & First-Use Requirement

Important: The ATS ShieldSafe warranty applies to the **first retail customer only**. If you are the original purchaser, you are the first retail customer. If you purchased the trailer used, contact ATS ShieldSafe to check warranty eligibility; used trailers may have limited or no remaining warranty coverage depending on the age and condition.

Summary Checklist — Chapter 3

Before moving forward to Chapter 4 (Setup & Installation), verify:

☐ No shipping damage was found during Exterior Inspection (Section 3.1)

☐ No damage was found during Interior Inspection (Section 3.1)

☐ VIN has been recorded (Section 3.3)

☐ Trailer has been registered with ATS ShieldSafe (Section 3.3)

☐ If damage was found, a claim was filed with ATS ShieldSafe within 10 days (Section 3.2)

Once you have completed these steps, proceed to **Chapter 4: Setup & Installation** to prepare your ClimateRig for operation on the job site.

Next Chapter: Chapter 4 — Setup & Installation (site selection, leveling, electrical connection, generator setup, pre-operation checklist)

Chapter 4: Setup & Installation

This chapter guides you through preparing your ClimateRig for operation. Before workers enter the trailer, you must complete site selection, leveling, electrical connection, and a final safety checklist. Allow 1–2 hours for first-time setup.

4.1 Site Selection

Choose a level, well-drained location that meets these requirements:

Ground & Drainage

- Level terrain with no slope greater than 2 degrees
- Free of standing water, mud, or unstable soil
- Avoid areas with poor drainage; rain runoff should flow away from the trailer

Power Access

- Within 30–50 feet of a 30A, 120/240V power source (generator or shore power)
- Use the included 20-foot L14-30 extension cord for connections up to 20 feet; add additional approved extension cord (maximum 50 feet total run) for longer distances
- Ensure power source can deliver 30A continuously; see Section 4.4 for generator requirements

Worker Access

- Clear approach to the rear door and emergency exit (front)
- Flat access path for workers entering and exiting
- Minimum 3-foot clearance on all sides for maintenance and air circulation

Environmental & Safety

- Position at least 20 feet downwind from combustion sources (generators, welding, fires)
- Avoid high-traffic areas where forklifts or heavy equipment operate
- Keep clear of overhead hazards (power lines, crane swings, unstable structures)
- Position in partial shade if possible to reduce cooling load and improve efficiency

Site Setup Time Once location is selected, allow 30–45 minutes to level and stabilize the trailer before connecting power or operating the A/C system.

4.2 Leveling & Stabilization

A level trailer operates safely and cools efficiently. Uneven leveling can damage interior components and reduce A/C performance. Proper leveling also ensures that condensate water from the A/C units drains correctly off the roof.

Before You Begin

- Unhitch the trailer from the tow vehicle and ensure the hitch coupler is secured
- Place wheel chocks on both sides of at least one tire to prevent rolling
- Remove any cargo or equipment from inside the trailer
- Locate the four manual screw-down stabilizer jacks (one at each corner on the underside of the frame)

Leveling Procedure

1. Park the trailer on level ground as close as possible to your chosen site.
2. Using a 2-foot level, check the floor from front to back and side to side. Place the level on the interior floor near the center.
3. Lower the rear stabilizer jacks until the trailer is level side-to-side and front-to-back:

- Locate the screw handle at the bottom of each rear jack (left and right side)
- Turn the screw handle clockwise to lower the jack; turn counterclockwise to raise it
- Turn slowly and check level after every 1–2 full rotations
- Adjust both sides until the trailer is level in both directions

4. Lower the front hitch jack about 1 degree (1–2 turns). This gentle forward slope ensures that condensate water from the rooftop A/C units drains off the front of the trailer, away from the rear entry door.
5. Engage all four stabilizer jacks:
   - Tighten each screw handle clockwise until the jack foot contacts the ground firmly and supports the frame
   - Do not over-tighten; hand-pressure is sufficient
6. Final check: Re-test the interior floor with the level. The trailer should be level side-to-side and slope very slightly toward the front.
7. If you must move the trailer after leveling, retract all jacks fully by turning the screw handles counterclockwise until they are flush with the frame. Do not tow with jacks extended.

4.3 Electrical Connection (L14-30 Inlet)

WARNING: Improper electrical connection can cause fire, electrocution, or equipment damage. If you are not trained in electrical work, have a licensed electrician perform this procedure.

Power Requirements

- Supply voltage: 120/240V AC, single-phase, 60 Hz
- Recommended breaker size at source: 30A
- Shore power or generator minimum rating: 30A continuous at 120/240V
- Total system draw: Under full cooling load, each 120V leg of the L14-30 inlet draws approximately 16A.

Included Cable & Connector

- 20-foot L14-30 extension cord (12 AWG wire, twist-lock connector)
- Rated for 30A, 120/240V
- Comes with a weatherproof cover cap

Electrical Inlet Location

- Located on the curb side of the trailer, near the rear, in a weather-protected electrical box

Connection Steps

1. Inspect the inlet connector and the plug end of the extension cord for dirt, corrosion, or damage. Clean both with a dry cloth if needed.
2. Inspect the 20-foot extension cord for any visible cuts, cracks, or damage to the outer jacket. Do not use a damaged cord.
3. Confirm that the breaker at your power source (generator or shore power pedestal) is in the OFF position.
4. Align the L14-30P plug with the inlet connector (twist-lock design). The prongs should slide in without forcing.
5. Insert the plug fully into the inlet. Turn the plug clockwise (hand-tight) until you hear or feel a click. The connector should be fully seated.
6. Tug gently on the connector to ensure it is secure and will not pull free.
7. Verify that the female connector has fully rotated and locked; the grommet or locking tab should be in the "locked" position.
8. At your power source, switch the breaker to the ON position. Turn the rocker switch above the entrance to ON. You should see lights illuminated inside the trailer.
9. Inside the trailer, verify that all interior lights are working and each A/C unit's control panel is displaying normally (no error codes).
10. Confirm that the breaker panel label inside the trailer matches your shore power voltage (should show 120/240V, 30A).

Disconnection Steps

1. Inside the trailer, turn off each A/C unit via its control panel (see Chapter 5).
2. Wait 2 minutes for the system to fully power down.
3. At the power source, switch the breaker to OFF.
4. At the inlet, grasp the connector body (not the cable) and turn counterclockwise to unlock.
5. Pull the connector firmly but smoothly to separate it from the inlet. Do not yank.
6. Replace the weatherproof cover cap on the inlet immediately to prevent moisture ingress.
7. Coil the extension cord loosely and store it in a dry location away from foot traffic.

4.4 Generator Setup (If Applicable)

If shore power is not available, you may power the ClimateRig with a portable generator.

Generator Requirements

- **Minimum Rating:** 4,000W continuous output at 120/240V (to reliably run one A/C unit plus lights and outlets)
- **Recommended Rating:** 8,000W continuous output (permits both A/C units to operate simultaneously, plus all other loads)
- **Voltage & Phase:** 120/240V, single-phase AC, 60 Hz
- **Outlet:** L14-30
- **Fuel:** Gasoline, propane, or diesel depending on generator model

Generator Positioning

- Place the generator at least 25 feet away from the trailer and occupied areas (reduce carbon monoxide exposure)
- Position downwind from the trailer if possible
- Level the generator on a firm, dry surface; use generator leveling feet or shims if needed
- Protect the generator from rain and splashing water with a waterproof cover or tent
- Ensure the generator exhaust outlet is pointed away from the trailer and workers

Generator Startup & Connection

1. Fill the generator fuel tank with the correct fuel type and oil (if applicable per generator manual).
2. Ensure the generator is on level ground and the choke is set for cold start (if equipped).
3. Start the generator using the pull-cord or electric starter.
4. Allow the generator to warm up for 2–3 minutes before connecting the trailer.
5. Inspect the 20-foot extension cord (Section 4.3) for damage.
6. Plug the L14-30P connector into the generator's L14-30R outlet. Turn the connector clockwise until it locks securely.
7. Proceed with the electrical connection steps in Section 4.3 (steps 7–10).

Generator Shutdown

1. Inside the trailer, turn off each A/C unit via its control panel (Chapter 5).
2. Wait 2 minutes for the system to power down.
3. At the generator, disengage the load by unplugging the extension cord (turn the connector counterclockwise and pull firmly).
4. Allow the generator to idle for 2–3 minutes to cool down.
5. Switch the generator's fuel valve to OFF or use the generator's shutdown switch.
6. Allow the generator to stop naturally; do not force the switch.

Weekly Generator Maintenance

- Check fuel level and refuel if below half-tank
- Inspect the oil level on the sight glass and top up if low
- Inspect the air filter and clean or replace if visibly clogged
- Listen for unusual noises or vibration and stop the unit if detected

4.5 Pre-Operation Checklist

Complete this checklist before allowing any workers to enter the trailer. Check off each item and note the date and time.

Structural & Safety

- ☐ Trailer is level side-to-side and slopes slightly toward the front for A/C condensate drainage (verified with 2-foot level)
- ☐ All four stabilizer jacks are fully extended and locked
- ☐ Wheel chocks are placed on both sides of at least one tire
- ☐ Rear door swings freely and latches securely
- ☐ Emergency exit door (front) is not obstructed and can be opened by hand
- ☐ All polycarbonate windows are intact (no cracks or large scratches)
- ☐ Interior floor is clean and free of debris or tripping hazards
- ☐ All interior LED lights are functional
- ☐ Benches are secured to the floor and stable

Electrical & Climate Control

- ☐ Shore power or generator is stable and running (if generator, position confirmed ≥ 25 feet away)
- ☐ 20-foot extension cord is plugged in and locked to inlet connector
- ☐ Interior breaker panel is showing normal status (no breakers in the OFF or TRIPPED position)
- ☐ Both A/C unit control panels are powered on and displaying current temperature
- ☐ Both A/C rooftop units are secure and no water leaks are visible around roof openings
- ☐ No visible damage to power cord or electrical connections

A/C System & Cooling

- ☐ Each A/C unit's control panel is responding to button presses
- ☐ Remote control batteries are installed and remote is responding (if remote available)
- ☐ A/C units can be switched to COOL mode without error messages
- ☐ Interior temperature is displayed on each A/C control panel and matches an external thermometer (within 2°F)
- ☐ Both A/C units are cooling (place hand near interior vents; cool air flow should be felt within 30 seconds of turning on COOL mode)
- ☐ No unusual noises, vibrations, or odors from the rooftop A/C units

Device Charging (If Optional Power Bank Is Installed)

- ☐ USB charging stations are powered on and display indicator lights (or accept a USB charger)
- ☐ AC power outlets (8 × NEMA 5-15R) accept a plug without difficulty and are providing power to test devices

Capacity & Occupancy

- ☐ Benches can accommodate the intended number of workers (maximum 18 workers)
- ☐ Floor space is adequate for planned worker movement and rest positions
- ☐ Adequate airflow is felt throughout the interior (no dead zones or stagnant areas)

Safety Documentation

☐ A copy of this manual or quick-reference safety card is visible inside the trailer

☐ Maximum occupancy limit (18 workers) is posted on or inside the trailer door

☐ Site supervisor has reviewed emergency exit procedures with workers

Sign-Off

- Site Manager Name (printed): _____
- Signature: _____
- Date & Time: _____
- Generator Model (if used): _____
- Initial Interior Temperature: _____°F

Chapter 5: Operation

5.1 Starting the A/C System

The ClimateRig has two air-conditioning units that work together to cool or heat your space. Both units cool at 16,000 BTU each (32,000 BTU total) or heat at 12,500 BTU each (25,000 BTU total). Each unit has its own control panel. You can also control them with a wireless remote control or a WiFi app on your phone.

Before starting the A/C system, follow these steps:

1. Verify that the external power source is connected to the L14-30 inlet on the trailer and is providing power. See Chapter 4: Setup & Installation for connection details.
2. Locate the electrical panel (on the front wall of the trailer, opposite the emergency exit).
3. Confirm the breaker at your shore power source or generator is ON. The interior LED lights should come on.
4. Turn on the first A/C breaker (labeled "AC Unit #1" on the panel). Wait 10 seconds, then turn on the second A/C breaker (labeled "AC Unit #2"). Staggering the startup smooths out inrush current and reduces load on the power source.
5. Wait 30 seconds for both A/C compressors to initialize.
6. Use one of these methods to turn on each A/C unit:
   - **A/C Control Panel:** Tap the power button on each unit's built-in control panel. Set your desired temperature (see Section 5.2).
   - **Remote Control:** Press the power button on the wireless remote. Use the up/down buttons to set temperature.
   - **WiFi App:** Open the Fogatti app on your smartphone. Tap the power button and select your temperature.
7. Verify that you feel air moving from both units within 1–2 minutes. Check the vents near the ceiling for steady airflow.

5.2 Temperature Control & Monitoring

Each A/C unit has its own control panel. You can also use the wireless remote control or WiFi app to set the temperature and monitor conditions inside the trailer.

Using the A/C Control Panel:

1. Locate each unit's control panel (mounted on the interior ceiling assembly below each A/C unit).
2. To adjust temperature, tap the up or down arrow buttons on the display. Temperature can be set between 64°F (18°C) and 115°F (46°C) for cooling mode, and 61°F (16°C) to 86°F (30°C) for heating mode.
3. The display shows the current interior temperature on the left and your set-point (target) temperature on the right.
4. Select cooling, heating, or auto mode:
   - **Cooling Mode:** A/C units remove heat and lower temperature.
   - **Heating Mode:** A/C units operate as heat pumps to provide warmth. Below 23°F (–5°C), do not use the heat pump; use the Optional Forced Air Heater if installed. Never run the heat pump and the forced air heater at the same time — the combined draw will exceed the 30A electrical rating. See "Heating Mode — Heat Pump Operation & Guidelines" below for details.
   - **Auto Mode:** System switches between cooling and heating based on the set-point.
5. To activate **auto-oscillation** (horizontal air sweep for better air distribution), tap the oscillation button on the control panel. The vents will sweep left and right between 0° and 85°. This helps distribute cool or warm air evenly across the space.

Using the Wireless Remote Control:

1. Point the remote toward the A/C unit.
2. Use the power button to turn the system on/off.
3. Press the up arrow to increase temperature; press the down arrow to decrease temperature.
4. Press the mode button to cycle between cooling, heating, and auto.
5. Press the oscillation button to turn the automatic air sweep on/off.

Using the WiFi App:

1. On your smartphone or tablet, open the Fogatti app.
2. Select the trailer unit (if you have multiple trailers).
3. Tap the temperature up/down controls to adjust the set-point.
4. Toggle the mode (cool, heat, or auto).
5. Enable or disable oscillation from the app menu.
6. Monitor the current interior temperature in real-time on the app screen.

Avoiding Thermal Shock — Temperature Set-Point Guidelines

CAUTION: Thermal Shock Risk

Hazard: Setting the ClimateRig too cold can cause thermal shock when workers enter from extreme outdoor heat. A sudden drop in body temperature can trigger dizziness, fainting, muscle cramps, or cardiovascular stress — particularly in workers who are already heat-fatigued or dehydrated.

How to Avoid It:

- Do not set the interior temperature more than 15–20°F below the outdoor temperature.
- Allow workers' bodies to cool gradually. A comfortable cool-down environment is more effective than an ice-cold one.
- Monitor workers for signs of distress when they first enter the trailer.

Use the following table to select an appropriate interior set-point based on the current outdoor temperature:

Key principles:

- **Gradual is better.** A 15–20°F temperature reduction is enough to provide significant heat relief and begin lowering core body temperature. Aggressive cooling (setting the trailer to 65°F on a 105°F day) does more harm than good.
- **Hydration matters more than cold air.** Cool water intake is the most effective way to lower core body temperature. The ClimateRig provides a comfortable environment for rest and rehydration — it is not a walk-in cooler.

Outdoor Temperature	Recommended Set-Point Range	Maximum Differential	Notes
85–90°F	72–76°F	15°F	Standard comfort range for moderate heat days
90–95°F	74–78°F	18°F	Workers may feel chilled below 74°F after prolonged heat exposure
95–100°F	76–80°F	20°F	Gradual cool-down prevents dizziness and muscle cramps
100–105°F	78–82°F	20°F	Avoid setting below 78°F; large temperature swings increase thermal shock risk
105–110°F	80–85°F	20°F	Focus on rest, hydration, and gradual cooling; do not overcool
>110°F	82–88°F	20°F	Extreme conditions; prioritize hydration and monitored cool-down over aggressive cooling

Table 5-1: Temperature

-
- **Watch for warning signs.** If a worker enters the ClimateRig and experiences sudden chills, shivering, dizziness, or nausea, the interior may be set too cold. Raise the set-point and monitor the worker closely.
- **Acclimatize new workers.** Workers who are new to the job site or returning from time off are more susceptible to both heat illness and thermal shock. Allow extra rest time and avoid extreme temperature differentials for these workers.

Heating Mode — Heat Pump Operation & Guidelines

The Fogatti InstaCool Ultra units use **heat pump technology** to provide heating. A heat pump works by reversing the cooling cycle — instead of removing heat from the interior, the system extracts heat energy from outdoor air and transfers it inside the trailer. This is an efficient method of heating, but it has important operating characteristics and limitations that differ from conventional electric or fuel-fired heaters.

Operating Temperature Range for Heating Mode:

Parameter	Value
Outdoor operating range	23°F (–5°C) to 75°F (24°C)
Interior set-point range	61°F (16°C) to 86°F (30°C)
Heating capacity (per unit)	12,500 BTU
Heating capacity (both units)	25,000 BTU total

Table 5-2: Temperature

How to Activate Heating Mode:

1. On each unit's control panel, press the mode button and cycle to **HEAT** mode (the mode cycles through AUTO → COOL → DRY → FAN → HEAT).
2. Set your desired interior temperature using the up/down buttons (61°F to 86°F range).
3. **Expect a 1–5 minute warm-up delay.** When heating mode starts, the indoor fan will not blow immediately. The system waits until the heat exchanger reaches operating temperature before delivering air. This prevents cold air from blowing into the space. The delay is longer when the interior is very cold.
4. Once warm air begins flowing, verify airflow from both units. Use TURBO mode (if available on the remote or app) for rapid initial warm-up.
5. Enable auto-oscillation to distribute warm air evenly throughout the trailer.

Heat Pump Performance Guidelines:

Outdoor Temperature	Heat Pump Performance	Recommended Action
50–75°F (10–24°C)	Full efficiency; heat pump operates at peak capacity	Standard heating operation. Set desired temperature and allow system to maintain.
35–50°F (2–10°C)	Good efficiency; heating capacity begins to decrease gradually	Allow extra time to reach set-point. Both units should run simultaneously.
23–35°F (–5–2°C)	Reduced efficiency; defrost cycles become more frequent	Expect longer warm-up times. If the heat pump cannot maintain set-point, turn it off and switch to the Optional Forced Air Heater (if installed). Never run both at the same time.
Below 23°F (–5°C)	Outside operating range	Do not use the heat pump. Use the Optional Forced Air Heater if installed, or provide an alternative heat source. Never run the heat pump and the forced air heater at the same time — the combined draw will exceed the 30A rating of the ClimateRig's electrical system.

Table 5-2: Heat Pump

Understanding Defrost Cycles:

When outdoor temperatures drop below approximately 40°F (4°C), moisture in the outdoor air can freeze on the outdoor heat exchanger coil. To prevent ice buildup, the system periodically runs a **defrost cycle**:

- During a defrost cycle, the heat pump temporarily reverses operation to melt ice from the outdoor coil.
- The indoor fan may stop or blow cool air briefly (typically 2–10 minutes).
- This is **normal operation** — it is not a malfunction. Do not turn off the unit during a defrost cycle.
- Defrost cycles become more frequent as outdoor temperatures drop closer to the 23°F lower limit.
- After defrost completes, the system automatically returns to heating mode.

Auxiliary Heater (Optional 2,000W Forced-Air Heater):

If your ClimateRig is equipped with the optional 2,000W forced-air heater (240 VAC), it provides supplemental heating independent of the heat pump:

- The auxiliary heater operates on a dedicated 20A 2-pole breaker at the electrical panel.
- It is most useful when outdoor temperatures are below 35°F, where heat pump efficiency drops significantly.
- Never run the forced air heater and the heat pump at the same time. The combined electrical draw will exceed the 30A rating of the ClimateRig's electrical system. Turn off the heat pump before turning on the forced air heater, or vice versa." and "Below 23°F (–5°C), turn off the heat pump entirely and use only the forced air heater..
- The auxiliary heater is **not available** in C1D2 (hazardous location) configurations.

CAUTION: Heat Pump Limitations

Hazard: Operating the heat pump outside its rated outdoor temperature range (below 23°F / –5°C) may cause the system to run continuously without reaching the set-point, potentially damaging the compressor. Never run the forced air heater and the heat pump at the same time. The combined electrical draw will exceed the 30A rating of the ClimateRig's electrical system. Turn off the heat pump before turning on the forced air heater, or vice versa." and "Below 23°F (–5°C), turn off the heat pump entirely and use only the forced air heater.

How to Avoid It:

- Monitor outdoor temperature. If conditions fall below 23°F, urn off the heat pump and use only the Optional Forced Air Heater
- Do not set the interior temperature higher than 86°F (30°C) in heating mode.
- If the unit repeatedly starts and stops in cold weather, the protective controls are activating. This indicates conditions are near or beyond the operating limits.
- Allow the system to complete defrost cycles without interruption.
- **Never operate the heat pump and the forced air heater simultaneously.** Always turn one off before turning the other on.

Key Heating Principles:

- **Heat pumps are most efficient in moderate cold.** Between 35°F and 75°F outdoor, the heat pump delivers reliable, energy-efficient heating. Performance degrades as temperatures approach the 23°F lower limit.
- **Plan for the forced air heater in deep cold.** If your job site regularly sees temperatures below 35°F, the optional 2,000W forced air heater is strongly recommended. Below 23°F, turn off the heat pump and use only the forced air heater. Never run both at the same time — the combined draw exceeds the 30A electrical rating.
- **Warm-up takes time.** Unlike a conventional space heater, a heat pump warms a space gradually. Start the system 15–30 minutes before workers need the trailer in cold weather.
- **Both units should run in heating mode.** For fastest warm-up and most even temperature distribution, operate both A/C units in heating mode simultaneously.
- **Defrost cycles are normal.** Brief interruptions in warm airflow during cold weather are expected. Do not repeatedly restart the units — let the automatic defrost cycle complete.

5.3 Managing Worker Capacity (18 Max)

The ClimateRig is designed to cool and heat up to **18 workers** safely and comfortably. This capacity limit is important for three reasons:

1. **Cooling Load:** The A/C system is sized for 18 workers. Exceeding this number means the system may not cool the space adequately, especially on very hot days.

2. **Emergency Exit Safety:** The trailer has designed emergency exits (rear door and front emergency exit). With more than 18 people, exit routes may become blocked or crowded, creating a safety hazard in an emergency.
3. **Worker Comfort:** More people generate more body heat. Crowding beyond 18 reduces comfort and could increase heat-stress risk rather than prevent it.

Managing Occupancy:

1. Before workers enter the trailer, count the number of people inside. Do not allow more than 18 people at any time.
2. Post a sign on the trailer entrance stating: "Maximum Occupancy: 18 Workers." This reminds everyone of the limit.
3. If workers need to rotate in and out, keep a log of entry and exit times. This helps ensure compliance with your site's heat-illness prevention plan (see Chapter 10: Regulatory Compliance).
4. If your workforce exceeds 18 people and all need rest at the same time, consider using multiple trailers or staggering rest periods.

5.4 Device Charging Stations (Optional Power Bank)

If your ClimateRig is equipped with the optional Power Bank, the trailer includes 8 electrical outlets and 2 USB charging stations so workers can charge phones, tablets, and other personal devices during rest breaks.

AC Outlets (Charging for High-Power Devices):

1. Plug in charging cables for phones, tablets, power banks, and similar low-draw devices only. Although the circuit is rated for 15 amps per the National Electrical Code, these outlets are designed for light-duty charging use — not for high-draw equipment.
2. Do not plug in power tools, space heaters, portable air conditioners, or other high-draw equipment. These will overload the circuit.
3. If an outlet does not work, check the electrical panel to see if the 15A GFCI breaker (labeled "Power Outlets") has tripped. If it has, press the reset button on the breaker to restore power.

USB Charging Stations (Low-Power Mobile Devices):

1. Locate the 2 multi-port USB charging stations (typically installed on the wall or central console).
2. Each station has up to 4 USB ports. Plug your device's charging cable into any available port.
3. USB stations are ideal for phones, smartwatches, fitness trackers, and wireless earbuds.
4. Do not force cables or connectors. If a port is loose or damaged, use a different port.

Important Electrical Limits:

- The AC outlet circuit is protected by a 15A GFCI breaker. This breaker automatically shuts off power if it detects a ground-fault condition (such as water contact). Do not bypass or disable this breaker.
- Do not plug multiple high-draw devices into a single outlet at the same time. This can trip the breaker and cut power to all outlets.
- Do not use extension cords or multi-outlet adapters unless necessary. These can degrade voltage and create fire hazards.

5.5 Emergency Exit Procedures

In the event of an emergency (fire, medical emergency, or system malfunction), all occupants must evacuate the trailer immediately. Know the location of exits before an emergency occurs.

Location of Exits:

1. **Rear Door:** The main entrance/exit is the hinged double door at the rear of the trailer. It includes a built-in step for safe entry and exit.
2. **Front Emergency Exit Door:** A secondary exit is located at the front of the trailer. This door is marked as the emergency exit. Use this route only if the rear door is blocked or unusable.

Evacuation Steps:

1. On hearing an alarm or urgent signal, stop all activities immediately.
2. Move toward the nearest exit (rear or front). Do not wait for directions.
3. Use the handrail and step carefully to exit the trailer safely.
4. Once outside, move at least 50 feet away from the trailer, moving perpendicular to the towing direction.
5. Assemble at a designated assembly point (located away from the trailer and any other hazards). Your site supervisor should identify this location before workers enter the trailer.
6. Wait for all-clear signal before re-entering the trailer.

Important Exit Safety Rules:

- **Never block exits.** Do not place equipment, supplies, or furniture in front of or against the rear door or front emergency exit.
- **Keep exits clear at all times.** Even when the trailer is not in use, maintain clear access to both exits.
- **Know the exit location before entering.** On your first time in the trailer, take note of where both exits are located.
- **Familiarize yourself with the exit route.** If possible, practice using the exit before an emergency occurs.

5.6 WBGT Monitoring Integration

The ClimateRig is a key tool for implementing a heat-illness prevention program that meets OSHA requirements. However, the trailer alone does not prevent heat illness. You must use the trailer in combination with **Wet Bulb Globe Temperature (WBGT) monitoring** and a structured **work/rest cycle** plan.

What is WBGT?

WBGT is a heat-stress measurement that combines air temperature, humidity, wind speed, and solar radiation. It is more accurate than air temperature alone for predicting heat-illness risk. OSHA provides a free WBGT calculator online.

How to Use the ClimateRig in a Heat-Illness Prevention Program:

1. **Measure WBGT daily** before work starts and throughout the shift. Use the OSHA WBGT calculator (https://www.osha.gov/heat-exposure/wbgt-calculator) or a portable WBGT meter.
2. **Establish work/rest cycles** based on your site's WBGT and the type of work:
   - At high WBGT (85°F or above), workers should take longer rest breaks in the ClimateRig.
   - At lower WBGT (below 78°F), rest-break frequency can be reduced.
   - Follow your site's heat-illness prevention plan or OSHA guidance.
3. **Encourage fluid intake.** Make cool water available at all times. Workers should drink regularly, not just when thirsty.
4. **Monitor workers for signs of heat illness:**
   - Excessive sweating or lack of sweating
   - Rapid or irregular heartbeat
   - Dizziness or confusion
   - Nausea or vomiting
   - If any worker shows these signs, remove them immediately and seek medical help.
5. **Keep the ClimateRig running during the shift.** Set temperature to a comfortable level (72–76°F is typical for a cool-down rest area). Ensure the trailer is available to all workers equally.

5.7 Daily Operation Checklist

Use this checklist every day the trailer is in operation. Completing these checks ensures the A/C system, electrical power, and safety features are working properly.

Morning Startup (Before Workers Enter):

- ☐ Check that the power source (generator or shore power) is connected and active.
- ☐ Confirm shore power or generator breaker is ON, then turn on A/C Unit #1 breaker, wait 10 seconds, then A/C Unit #2 breaker.
- ☐ Turn on each A/C unit using its control panel, remote, or app.
- ☐ Wait 1–2 minutes and verify airflow from both units by holding your hand near the vents.
- ☐ Check that each A/C control panel displays a reasonable current temperature (typically 70–80°F if the trailer has been idle).
- ☐ Set temperature to your target (e.g., 72°F).
- ☐ Verify that no equipment or supplies are blocking the rear door or front emergency exit.
- ☐ If Power Bank is installed, check AC outlets to ensure none are damaged or wet.
- ☐ If Power Bank is installed, test one USB charging station by plugging in a phone to confirm power flows.

Mid-Day Verification (Every 4 Hours During Shift):

- ☐ Check current temperature on each A/C control panel. It should be close to your set-point (within a few degrees).
- ☐ Listen for unusual noises from the A/C units (grinding, rattling, or humming louder than normal may indicate a problem).
- ☐ Visually inspect the rear door and front emergency exit. Ensure they open freely and are not blocked.
- ☐ Count occupancy. Verify that no more than 18 workers are inside.

End-of-Day Shutdown:

1. Tell all workers to exit the trailer.
2. Turn off each A/C unit using the control panel, wireless remote, or app. Do not skip this step — turning off the units properly allows the compressor and fans to shut down in the correct sequence.
3. Wait 1 minute for the units to fully shut off.
4. Turn off both A/C breakers at the electrical panel.
5. Turn off the breaker at the shore power source or generator.
6. Unplug all charging cables from AC outlets and USB stations.
7. Visually inspect the interior for any damaged seats, windows, or doors. Note any issues and report them to your supervisor or service provider.
8. Verify that the rear door and front exit door are fully closed and latched.
9. If the trailer will be idle for more than 1 week, disconnect the external power source at the inlet.

Chapter 6: Maintenance

Proper maintenance keeps your ClimateRig running reliably and protects your investment. This chapter explains the routine tasks you should perform and when to perform them. Follow the maintenance schedule below to prevent problems and ensure the warranty remains valid.

6.1 Routine Maintenance Schedule

Regular maintenance is required to keep the ClimateRig in top working condition. Use this table as your guide for daily, weekly, monthly, quarterly, and annual tasks.

Interval	Task	Details
Daily	Inspect interior	Check for damage, debris, or water leaks.
Daily	Review A/C operation	Confirm cooling/heating is working as expected.
Daily	Check wheel chocks	Verify chocks are in place on both sides of at least one wheel.
Weekly	Clean interior	Wipe benches and walls. Sweep floor.
Weekly	Check outlet function (if equipped)	Test GFCI receptacles and USB charging stations with a device (optional Power Bank units only).
Monthly	Inspect exterior	Look for dents, rust, or panel separation.
Monthly	Check tire pressure	Verify pressure per tire sidewall (not over- or under-inflated).
Monthly	Visually inspect brakes	Check electric brake magnets, wiring, and connectors for damage, corrosion, or wear.
Quarterly	Wash condenser coil	Remove dirt and debris from outdoor A/C unit.
Quarterly	Exercise breakers	Turn each breaker off and on to prevent sticking.
Quarterly	Inspect door seals	Check for cracks or separation around door and window frames.
Annually	Clean A/C filter	Replace or deep-clean filter.
Annually	Inspect axle bearings	Check for proper lubrication; add grease if needed.
Annually	Full electrical check	Test ground continuity and ground pins.
Annually	Winterization	Prepare ClimateRig for storage if not in use during cold months.

Table 6-1: Maintenance

6.2 A/C System Maintenance

Your ClimateRig has two Fogatti InstaCool Ultra air-conditioning units. Keeping them clean and leak-free ensures reliable cooling and heating.

Air Filter Inspection and Cleaning

The A/C system includes replaceable filters that trap dust and pollen. When the filter gets clogged, cooling performance drops.

When to Clean:

- Clean the filter when the **FILTER CHECK** indicator appears on the A/C unit's control panel.
- In dusty or high-particulate environments, you may need to clean more frequently.

How to Clean the Filter:

1. Turn off both A/C units using their control panels.
2. Turn off both A/C breakers (labeled "AC Unit #1" and "AC Unit #2") at the electrical panel on the front wall.
3. Wait 5 minutes for the system to discharge.
4. Locate the indoor A/C filter on the ceiling-mounted indoor unit.
5. Gently pull the filter straight out toward you.
6. Wash the filter with clean water or use a household vacuum with a soft brush attachment.
7. Allow the filter to dry completely before reinstalling.
8. Slide the filter back into its slot until it seats fully.
9. Turn on the A/C breakers. Wait 10 seconds between each breaker to smooth out inrush current.
10. Turn on each A/C unit using its control panel.

WARNING: HIGH VOLTAGE — RISK OF SERIOUS INJURY OR DEATH

Do not touch the capacitor terminals inside the A/C unit. Even with the power supply switched off, the capacitor may still have high voltage. Failure to follow this instruction could result in serious personal injury or death.

Condenser Coil Washing

The outdoor condenser coil (mounted on the roof) collects dirt, leaves, and insects. A dirty coil reduces cooling efficiency.

When to Wash:

- Wash the condenser coil **twice per year** — typically before summer and before winter heating season.
- Wash more frequently if the trailer operates in dusty, sandy, or pollen-heavy environments.

How to Wash the Condenser Coil:

1. Turn off both A/C units using their control panels.
2. Turn off both A/C breakers at the electrical panel on the front wall.
3. Wait 5 minutes.
4. Access the roof via ladder (ensure the ladder is stable and the roof is dry). Roof access is limited to single-person, short-duration maintenance only and the trailer must be on level ground with jacks engaged.
5. Use a soft brush or cloth to remove loose dirt and debris from the outdoor unit.
6. Rinse the coil gently with a garden hose (low pressure, not a pressure washer).
7. Allow the unit to dry.
8. Return to the interior. Turn on the A/C breakers (wait 10 seconds between each) and restart each unit using its control panel.

WARNING: ELECTRICAL HAZARD — RISK OF SHOCK

Ensure the A/C units are powered off before accessing any outdoor components. Do not spray water near electrical connections or the roof-mounted control box.

Refrigerant Leak Inspection

The ClimateRig A/C system uses R32 refrigerant. A refrigerant leak reduces cooling power and is a safety concern.

Visual Inspection (You Can Do This):

1. Look for oil stains or discoloration around the A/C connections and tubing on the roof.
2. If you see oily residue, refrigerant may be leaking.
3. Listen for unusual hissing sounds during A/C operation.

If You Suspect a Leak:

- Turn off the A/C system immediately.
- **Do not attempt to repair refrigerant connections yourself.**
- Contact an authorized ATS ShieldSafe service center. Only certified HVAC technicians with R32 certification are licensed to handle refrigerant service.

6.3 Exterior Cleaning & Inspection

The exterior of your ClimateRig is built from hot-dip galvanized steel and CellTech™ panels designed to resist rust and corrosion. However, regular cleaning extends the life of the finish.

Panel Washing

How Often: Monthly or as needed (more frequently in coastal, high-salt, or heavily soiled environments).

What You'll Need:

- Garden hose or pressure washer (low pressure only)
- Mild dish soap and water
- Soft-bristle brush or cloth
- Dry towel or compressed air

Procedure:

1. Rinse the exterior with clean water to remove loose dirt and debris.
2. Mix mild soap and water in a bucket.
3. Scrub the panels gently using a soft-bristle brush.
4. Rinse thoroughly with clean water.
5. Dry the exterior with a cloth or allow to air-dry.

What Not to Use:

- **Do not use** strong acids, alkalis, chloride-based cleaners, bleach, ammonia, or sulfur-containing solutions. These damage the galvanized finish and void the warranty.
- **Do not use** abrasive scrubbers or wire brushes.

Frame and Axle Inspection

How Often: Monthly.

Procedure:

1. Park the ClimateRig on level ground and engage the parking brake. Place wheel chocks on both sides of at least one wheel.
2. Walk around the entire trailer.
3. Look at the frame (beneath the trailer) for rust, cracks, or bent tubing.
4. Check the galvanized finish for white or gray powdery corrosion.
5. Inspect all welds and attachment points.
6. Look for rust on the axle tubes, springs, and brake components.

If You Find Rust:

- Light surface rust (white or gray powder) can be gently scrubbed away and treated with a rust-inhibiting primer.
- Deep pitting or structural damage requires professional evaluation. Contact ATS ShieldSafe.

Door and Window Seal Inspection

How Often: Quarterly.

Procedure:

1. Close all doors and windows securely.
2. Walk around the exterior and look at the rubber seals around the rear door and windows.
3. Feel for cracks, hardening, or gaps where light shows through.
4. Check the hinges and latches for proper alignment.

If Seals Are Damaged:

- Minor cracks (less than 1/4 inch) can be sealed with silicone caulk rated for outdoor use.
- Large gaps or missing seals should be replaced. Contact ATS ShieldSafe for replacement gaskets.

Polycarbonate Window Care

How Often: Monthly or as needed.

Cleaning Procedure:

1. Use mild soap and water with a soft cloth or sponge.
2. Gently wipe the window surface.
3. Rinse thoroughly with clean water.
4. Dry with a lint-free cloth.

What Not to Use:

- Do not use abrasive cleaners, solvents, or scrapers.
- Do not use pressure washers directly on windows.

6.4 Interior Cleaning & Sanitation

Since the ClimateRig is used by multiple workers in rapid succession, keeping the interior clean and sanitary is essential for health and worker comfort.

Daily Cleaning

Wipe Down Benches and Walls:

1. Use a damp cloth or sponge with mild soap and water.
2. Wipe all bench seating surfaces, including seat and back.
3. Wipe interior walls and handholds.
4. Pay special attention to areas where hands touch (door handles, doorframes, etc.).

Sweep and Mop the Floor:

1. Sweep loose debris from the non-skid floor surface.
2. Mop with a damp cloth or mop head using mild soap and water.
3. Rinse with clean water to remove soap residue.
4. Allow the floor to air-dry or dry with a towel.

Weekly Deep Cleaning

Sanitize Interior:

1. Mix a mild disinfectant solution per product instructions (e.g., 1 part household disinfectant to 10 parts water).
2. Wipe all frequently-touched surfaces: benches, armrests, door handles, handholds, control panels.
3. Allow the solution to contact the surface for the time specified on the product label.
4. Rinse thoroughly with clean water.
5. Dry with a clean towel or allow to air-dry.

Vacuum Seating:

1. Use a handheld or shop vacuum to remove dust and debris from bench seating surfaces.
2. Clean crevices and seams where dust accumulates.

Interior Light Inspection

How Often: Monthly.

Procedure:

1. Turn on all interior lights.
2. Check that all four 9-inch LED dome fixtures light up and operate normally.
3. Check the 5-inch rooftop porch light.
4. If a light is dim or non-functioning, contact ATS ShieldSafe for bulb replacement.

6.5 Axle, Tire & Brake Maintenance

The ClimateRig rides on two Dexter tandem electric-brake axles, each rated 3,500 lbs. These axles are built to DOT standards and are reliable, but they require routine maintenance.

Tire Pressure and Condition

How Often: Monthly and before towing.

What You'll Need:

- Tire pressure gauge
- Air compressor (optional)
- Visual inspection light or flashlight

Procedure:

1. Park on level ground.
2. Locate the tire-pressure specification on the sidewall of each tire.
3. Check all four tires with a pressure gauge.
4. If pressure is low, fill to the recommended PSI.
5. Do not over-inflate.
6. Visually inspect each tire for:
    - Cuts, cracks, or bulges
    - Uneven wear (feathering or bald spots)
    - Low tread depth (use the penny test: insert a penny upside-down into the tread; if you can see the top of Lincoln's head, the tire needs replacement)

If You Find Damage:

- Small punctures can be patched by a tire shop.
- Bulges, sidewall cracks, or tread below 2/32" require tire replacement.

Tire Age:

- Tires on trailers that are parked for extended periods are especially vulnerable to dry rot. UV radiation breaks down the rubber compound from the outside in, causing sidewall cracks that may not be visible until failure is imminent. Check tire pressure and sidewall condition monthly, even when the trailer is not in use. If the trailer will be parked for more than 30 days, cover the tires or park in shade. Replace tires at five years from the manufacture date regardless of appearance or remaining tread.

Axle Bearing Lubrication

How Often: Annually or every 12,000 miles towed.

What You'll Need:

- Bearing grease (lithium-based, NLGI Grade 2)
- Grease gun
- Jack or lift
- Wrench set
- Shop towels

When to Seek Professional Help:

Axle bearing service involves removing wheels and hubs. If you are not experienced with this work, have an authorized trailer service center perform it. They can inspect bearings, repack them with fresh grease, and verify brake function.

Signs You Need Bearing Service:

- Axle feels hot after towing (hotter than the rest of the trailer frame).
- Wheel makes a grinding or scraping sound while rolling.
- Axle appears to leak grease around the hub.

Brake Inspection and Adjustment

How Often: Quarterly or after heavy towing.

What to Look For:

1. Park on level ground, engage the parking brake, and place wheel chocks.
2. Look under the trailer at each brake assembly (visible on the axle tubes).
3. Inspect the electric brake components on each axle for:
    - Worn or glazed brake magnets (replace if magnet face is pitted, scored, or worn below 1/8 inch thick).
    - Frayed, cracked, or corroded wiring and connectors between the brake assemblies and the 7-pin trailer connector.
    - Brake drum scoring or heat discoloration (bluing indicates overheating).
    - Loose or missing mounting hardware.

If You Find Issues:

- Weak or inconsistent braking may indicate a worn brake magnet or poor electrical connection. Check the wiring from the 7-pin connector (pin 7, red wire) through to each brake assembly.
- A burning smell or visible heat discoloration on the drums requires immediate professional inspection.
- Uneven brake drag suggests a brake adjustment problem or a failing magnet on one side.

Brake Adjustment:

- Electric brakes require periodic adjustment as the brake shoes and magnets wear. If you notice the brakes feel weak or the brake controller gain must be set unusually high, the brakes likely need adjustment.
- Do not attempt to adjust electric brakes yourself unless you are trained and equipped to do so. Electric brakes are a critical safety system and should be serviced by a qualified trailer technician.
- There is no bleeding procedure — electric brakes do not use hydraulic fluid.

6.6 Electrical System Checks

The ClimateRig electrical system includes a 30A service and circuit breakers. If your unit is equipped with the optional Power Bank, it will also have GFCI receptacles and USB charging stations. Regular checks ensure safety and reliability.

Outlet and Circuit Testing (If Optional Power Bank Is Installed)

How Often: Monthly.

What You'll Need:

- Plug-in outlet tester (available at hardware stores, ~$10–20)
- A device that uses power (fan, charger, etc.)

Procedure:

1. Plug the outlet tester into each GFCI receptacle.
2. Check the indicator lights on the tester:
    - All three lights **on** = correct wiring ✓
    - Any light **off** = wiring problem (stop using that outlet)
3. Press the TEST button on each GFCI receptacle to verify it trips. Press RESET to restore power.
4. Plug a working device (like a phone charger) into each USB charging station and confirm it powers up.

If an Outlet Fails:

- Do not use that outlet.
- Turn off the corresponding breaker at the electrical panel (on the front wall, opposite the emergency exit).
- Contact ATS ShieldSafe for service.

Breaker Exercise

How Often: Quarterly.

Procedure:

1. Open the electrical panel door (located on the front wall, opposite the emergency exit).
2. Visually inspect all breakers for:
    - Signs of burning or discoloration
    - Tripped breaker handles (handle in OFF or middle position)
3. Exercise each breaker in sequence:
    - "AC Unit #1" (20A)
    - "AC Unit #2" (20A) — wait 10 seconds after the first
    - "Lighting / USB" (15A GFCI)
    - "Heater" (20A 2-pole, if installed)
4. For each breaker, switch it OFF and then back ON. Listen and feel for any unusual resistance or vibration.
5. Close the panel door.

If a Breaker Won't Reset:

- Do not force it.
- This indicates an electrical fault.
- Turn off all loads on that circuit and try again.
- If it still won't reset, leave it off and contact ATS ShieldSafe.

Power Cord and Connector Inspection

How Often: Before each use (especially before towing or long-term deployment).

Procedure:

1. Unwind the 20-foot L14-30 extension cord.
2. Inspect the entire length for:
    - Cuts, cracks, or exposed wires
    - Pinched or flattened sections
    - Damage from stepping on the cord
    - Heat damage (melted insulation)
3. Check the L14-30P male connector (plug end) for:
    - Bent or corroded pins
    - Cracked or melted plastic housing
4. Check the female inlet (curb side of the trailer, near the rear) for:
    - Corrosion or oxidation
    - Loose or bent pins
    - Cracks or missing cover cap

If You Find Damage:

- Do not use the cord.
- Contact ATS ShieldSafe for a replacement cord.
- Do not attempt to repair a damaged power cord with tape or splice connectors.

Ground Integrity Check

How Often: Annually.

What You'll Need:

- Multimeter (set to resistance/ohms mode)
- Safe location with adequate lighting

Procedure:

1. Turn off all breakers in the electrical panel.
2. Disconnect the power cord from the shore power or generator.
3. Set the multimeter to the ohms (Ω) setting.
4. Touch one probe to the green ground wire terminal in the electrical panel.
5. Touch the other probe to a metal part of the trailer frame (a bare bolt or exposed metal is fine).
6. The meter should read **near zero ohms** (0–1Ω is excellent; 0–5Ω is acceptable).
7. Repeat for multiple ground points.

If Resistance is High (>10Ω):

- This indicates a loose or corroded ground connection.
- Contact ATS ShieldSafe for inspection and repair.
- A poor ground is a safety hazard.

6.7 Seasonal Storage & Winterization

If you store the ClimateRig during winter or extended off-season periods, proper preparation prevents damage and extends component life.

Preparing for Cold Storage

Before Shutting Down for Winter:

1. **Drain and Clean:**
   - Empty the interior of all personal items.
   - Wash and dry the interior thoroughly to prevent mold.
   - Vacuum seating and floor.
2. **A/C System Preparation:**
   - Clean the air filter or replace it if more than one season old.
   - Wash the condenser coil (rooftop unit).
   - Turn off both A/C units using each unit's control panel.
   - Turn off both A/C breakers at the electrical panel.
3. **Electrical System:**
   - Disconnect the main power cord from shore power or generator.
   - Inside the electrical panel, switch all breakers to OFF.
   - Leave the interior lights OFF.
   - Remove any batteries from remote controls to prevent drain.
4. **Doors and Windows:**
   - Close all doors and windows.
   - Prop open the emergency exit door slightly (~2 inches) to allow air circulation and prevent mold buildup. Use a wooden wedge or foam block.
   - Do not lock the door fully; air circulation is essential.

5. **Tires and Suspension:**
    - Check tire pressure and top off if low.
    - Engage the parking brake and place wheel chocks.
    - If storing for more than 3 months, place jack stands under the frame to reduce weight on the tires and axles. This prevents flat-spotting and extends tire life.
    - Cover tires with UV-resistant covers or store the trailer indoors. If stored outdoors for more than 60 days, elevate the trailer on jack stands to relieve tire load and reduce flat-spotting.
6. **Exterior Protection:**
    - Wash the entire exterior with mild soap and water.
    - Dry thoroughly.
    - If possible, park in a covered shelter or under a carport to protect from UV rays and precipitation.
    - If shelter is not available, use a breathable tarp or cover to shed rain while allowing air circulation underneath.
7. **Jacks:**
    - Fully retract all four stabilizing jacks (screw them down completely).

Bringing the ClimateRig Out of Storage

Before First Use After Storage:

1. **Inspect the Interior:**
    - Look for any signs of moisture, mold, or pest damage.
    - Wipe down all surfaces.
    - Vacuum seating and floor.
2. **Check Tires and Wheels:**
    - Verify tire pressure.
    - Spin each wheel to confirm no flat-spotting or damage.
    - If flat-spotted, have them replaced before towing.
3. **Electrical System:**
    - Connect the power cord to shore power or a generator.
    - Turn on the breaker at the shore power source or generator.
    - Turn on the 15A GFCI breaker and test all lights.
    - If equipped with optional Power Bank, test GFCI receptacles and USB charging stations.
4. **A/C System:**
    - Turn on the "AC Unit #1" breaker. Wait 10 seconds, then turn on the "AC Unit #2" breaker.
    - Turn on each A/C unit using its control panel.
    - Wait a few minutes and verify cooling or heating output.
    - If the system is sluggish or won't cool/heat, it may need service. Contact ATS ShieldSafe.
5. **Doors and Windows:**
    - Fully close and lock all doors.
    - Verify that windows latch securely.
6. **Brake Test:**
    - Before towing, test the electric brakes by using the manual override on the tow vehicle's brake controller while rolling forward slowly. The trailer should slow smoothly and evenly. If you notice weak response, pulling to one side, or no braking at all, have the brakes inspected and serviced by a qualified trailer technician before towing.

Maintenance Records

Keeping maintenance records demonstrates proper care and helps with warranty claims. Use the template below to track service dates and work performed.

Why Keep Records:

- The warranty requires the ClimateRig to be "properly maintained" and used in "normal service."
- If a warranty claim is disputed, maintenance records prove you followed the manual's guidelines.
- Records help you stay on schedule and catch problems early.

IMPORTANT: This chapter covers routine maintenance. For any repair work beyond these basic tasks — especially refrigerant service, electrical panel work, or brake service — contact an authorized ATS ShieldSafe service center or certified technician. Attempting complex repairs without proper training can void the warranty and create safety hazards.

If you encounter a problem during maintenance, see **Chapter 7: Troubleshooting** for symptom-based diagnosis. For warranty coverage details and how to file a service claim, see **Chapter 9: Warranty & Service**.

Chapter 7: Troubleshooting

When something isn't working right on your ClimateRig, this chapter helps you figure out what's wrong and how to fix it. Most problems can be solved quickly by following a few simple steps. For issues you can't solve yourself, we tell you when to call a professional.

7.1 Symptom → Cause → Solution Tables

Use these tables to find your problem and its solution. Match the symptom in the left column, read across to find the most likely cause and solution.

A/C System Problems

Symptom	Possible Cause	Solution
A/C won't start	Power not connected to inlet	Check that power cord is plugged into L14-30P inlet; check that shore power or generator is turned on
A/C won't start	Shore power or generator breaker is OFF	Check that the breaker on the shore power pedestal or generator is turned ON
A/C won't start	A/C breaker is tripped	Open electrical panel; switch the 20A A/C breaker OFF, then back ON
A/C won't start	Unit not responding to remote or panel	Try resetting unit by turning OFF and waiting 2 minutes, then turning ON
A/C won't cool the space	Temperature setting is too high	Lower the set-point on the unit's control panel or remote control
A/C won't cool the space	Air filter is clogged	Remove and clean the filter (see Maintenance chapter)
A/C won't cool the space	Trailer is not level	A/C units must be level to operate properly. Level the trailer side-to-side and lower the front slightly for condensate drainage using the four stabilizer jacks (see Chapter 4).
A/C cooling is weak	Interior is very hot from direct sun exposure	Allow 10–15 minutes for the dual A/C system to bring temperature down
A/C cooling is weak	Air filter needs cleaning	Remove and inspect filter; clean if dust is visible
A/C is making unusual noise	Clicking or gurgling sounds during startup	Normal during operation; water may be flowing in the heat exchanger
A/C is making unusual noise	High-pitched whistling	Check that outlet air vents are not blocked; clear any obstructions
A/C unit is leaking water inside	Condensate drain is blocked or trailer is not sloped correctly	Clean drain opening on rooftop A/C unit (see Maintenance chapter). Verify the front of the trailer is lowered slightly so condensate drains off the front, away from the door.
A/C shows error code on panel	E6, E8, or other code displays	See Section 7.2 for error code meanings and solutions

Table 7-1: System Problems

Electrical & Power Problems

Symptom	Possible Cause	Solution
No power to trailer at all	Inlet not connected	Plug power cord into L14-30P inlet on trailer exterior
No power to trailer at all	Generator not running	Start the generator; check fuel level and on/off switch
No power to trailer at all	Shore power or generator breaker is OFF	Check the breaker on the shore power pedestal or generator; switch to ON
No power to trailer at all	Shore power cord damaged	Inspect 20-foot power cord for cuts, exposed wires, or water damage; do not use if damaged
GFCI receptacles not working (optional Power Bank)	GFCI receptacle has tripped	Press the RESET button on the affected GFCI receptacle. If all receptacles are dead, check the 15A GFCI breaker in the electrical panel.
GFCI receptacles not working (optional Power Bank)	Individual receptacle is dead	Test another receptacle; if others work, the dead one may have a loose connection — contact service
Interior lights not working	Lights are not switched ON	Find the light switch (interior location) and flip to ON
Interior lights not working	15A GFCI breaker is tripped	Open the electrical panel; reset the 15A GFCI breaker (flip OFF, wait 5 seconds, flip ON)
Interior lights not working	LED dome fixture burned out	Replace LED fixture (see Maintenance chapter for fixture removal)
Lights flicker on and off	Loose breaker or connection in panel	Turn OFF all breakers; inspect all breaker connections and tighten if loose; call service if problem persists
Lights flicker on and off	Generator output is unstable	If using a generator, check fuel level and ensure generator is running at steady RPM
Device charging is slow (optional Power Bank)	Too many devices charging at once	Unplug some devices; limit heavy-draw items when A/C is running
Device charging is slow (optional Power Bank)	Wire gauge or cord is undersized	Use the included 20-foot L14-30 extension cord; do not use long daisy-chained cords

Table 7-2: Electrical and Power Problems

Structural, Door & Window Problems

Symptom	Possible Cause	Solution
Rear door is hard to close or latch	Door hinge is misaligned	Loosen hinge bolts slightly; realign door frame; retighten bolts
Rear door is hard to close or latch	Latch mechanism is dirty	Clean latch with dry cloth; apply light silicone lubricant (do not use oil)
Rear door won't stay latched	Catch or latch is bent	Contact service for replacement parts
Emergency exit door is stuck	Door frame swollen or misaligned	Ensure trailer is level using stabilizer jacks; check door clearance
Window is cracked or damaged	Impact or stress fracture	Do not attempt repair; contact service for polycarbonate window replacement
Water is dripping inside near roof seams	Roof seal is leaking	Dry the interior; inspect roof from outside for gaps; contact service if visible opening found
Stabilizer jacks won't turn or are stuck	Jacks are dirty or corroded	Apply penetrating oil (WD-40 or similar) to threads; allow to soak 10 minutes; try again
Stabilizer jacks won't turn or are stuck	Threads are damaged	Contact service; do not force jack handle
Trailer sits uneven on the ground	Jacks not fully extended to level position	Use a level tool; extend or retract each jack until trailer is level side-to-side with the front lowered slightly for A/C condensate drainage
Bench seating is loose or wobbly	Bolts holding bench to frame are loose	Tighten all visible bolts under and around bench with appropriate wrench

Table 7-3: Structure

7.2 A/C Error Codes & Solutions

When the A/C unit's control panel displays an error code, it means the system has detected a problem. Most error codes can be cleared by restarting the unit. If an error returns after restart, the unit may need professional service.

Error Code Reference

Error Code	Meaning	What to Do
E6 or E8	System communication error	Restart the unit: Press OFF on the panel; wait 2 minutes; press ON. If the code returns, contact service.
PL	Power supply voltage too low	Check that shore power or generator is providing stable 120V AC. If using a generator, ensure it is running at full load capacity. If problem persists, call service.
F1, F2, F3, F4	Sensor fault or sensor reading error	Do not operate the unit. Contact qualified professionals for service. These codes indicate internal sensor failure.

Table 7-4: Errors

WARNING: R32 REFRIGERANT

R32 is a mildly flammable refrigerant (A2L classification). Do not attempt to service, recharge, or repair any part of the refrigerant system. Only certified HVAC technicians with R32 qualifications may perform refrigerant work. Keep ignition sources away from any suspected leak area.

7.3 Detailed Diagnosis: A/C Not Cooling

If your A/C unit is running but the interior is not getting cold, follow these steps in order to pinpoint the problem.

Step 1: Check Power & System Status

1. Confirm that the A/C control panel shows a steady temperature reading (not an error code).
2. If an error code displays, see Section 7.2 (Error Codes) before continuing.
3. Check that both the left and right A/C units are running (listen for fan noise from the rooftop).

Step 2: Verify Temperature Setting

1. Look at the A/C unit's control panel or remote control display.
2. Check the set-point temperature. If it is set to 85°F or higher, the A/C may not cycle on yet.
3. Lower the set-point to 72°F (22°C) to trigger cooling.
4. Wait 2–3 minutes for the system to respond.

Step 3: Check for Blocked Air Filter

1. Locate the air filter on the A/C indoor unit (ceiling-mounted).
2. Remove the filter by sliding it out or pressing the release tabs.
3. Hold the filter up to a light source. If you cannot see light through it, the filter is clogged.
4. Clean the filter with a soft brush or vacuum cleaner. Do not wash it unless the manufacturer instructions allow.
5. Reinstall the filter and test the A/C cooling again.

Step 4: Check Trailer Levelness

1. The A/C units work best when the trailer is level side-to-side.
2. Use a small level tool or smartphone level app.
3. Place the level on the floor in the center of the trailer.
4. If the bubble is not centered side-to-side, the trailer is tilted.
5. Lower the rear stabilizer jacks until the trailer is level side-to-side and front-to-back. Then lower the front hitch jack about 1 degree (1–2 turns) so condensate water drains off the front of the roof, away from the rear entry door. Engage all four stabilizer jacks.
6. Test the A/C cooling again.

Step 5: Wait for Cool-Down

1. If the interior is very hot (from direct sun or high outdoor temperature), cooling may take 10–15 minutes.
2. Do not turn off the A/C. Let it run continuously.
3. Close any doors and windows to keep cool air inside.
4. If the temperature does not drop after 20 minutes, move to Step 6.

Step 6: Check for Refrigerant Leak (Visual Inspection Only)

1. **WARNING: Do not attempt to repair or recharge the A/C refrigerant yourself. R32 refrigerant is under pressure and requires professional handling.**
2. Look at the rooftop A/C unit from outside. Inspect both copper refrigerant lines for signs of oil stains or wet spots (indicates a leak).
3. If you see wet spots or oily residue, contact service immediately.
4. If no visible leak, move to Step 7.

Step 7: Confirm Both A/C Units Are Operating

1. Listen at the rooftop. You should hear fan noise from both A/C units.
2. If you hear only one fan, the second A/C unit may be off or faulty.
3. Check the control panel to confirm both units are set to ON.
4. If one unit is not running, restart it using the remote or the unit's control panel.
5. If the unit does not restart, check the corresponding breaker ("AC Unit #1" or "AC Unit #2") at the electrical panel. Reset if tripped. If the unit still does not restart, contact service.

When to Call Service

If none of the above steps restore cooling, or if an error code reappears after restart, your A/C system needs professional service. Do not attempt to repair refrigerant lines or electrical connections yourself.

Contact: ATS ShieldSafe Service Hotline: **800.747.9953**

7.4 Electrical Issues

Most electrical problems are caused by loose connections, tripped breakers, or power supply problems. Follow these steps to diagnose.

No Power to the Trailer

1. **Check the Power Inlet Connection**
   - Walk to the curb side of the trailer, near the rear, and locate the L14-30P power inlet (twist-lock connector).
   - Confirm the power cord is fully plugged in and twisted clockwise until snug.
   - If using shore power (pedestal connection), confirm the breaker at the pedestal is ON.
   - If using a generator, confirm the generator is running and the power switch is ON.
2. **Check the Individual Breakers**
   - Enter the trailer and locate the electrical panel (on the front wall, opposite the emergency exit).
   - Check that the A/C breakers ("AC Unit #1" and "AC Unit #2"), the 15A GFCI breaker, and the heater breaker (if installed) are all in the ON position.
   - If any breaker is in the OFF or TRIPPED position, switch it fully OFF, wait 5 seconds, then switch it back ON.
   - If a breaker immediately trips back to OFF, leave it OFF and contact service (internal short circuit suspected).
3. **Check the Shore Power or Generator Breaker**
   - If all breakers at the trailer panel are ON but there is still no power, check the breaker at the shore power pedestal or generator.
   - If using a generator, verify the generator is running at steady RPM and providing stable voltage.

GFCI Receptacles Not Working (Optional Power Bank)

If your ClimateRig is equipped with the optional Power Bank (8 GFCI receptacles and USB charging stations):

1. **Check the Individual GFCI Receptacle**
   - Each GFCI receptacle has its own TEST and RESET buttons.
   - Press the RESET button on the receptacle that is not working.
   - If it clicks and power is restored, the receptacle tripped due to a ground fault. Identify and remove the device that caused the trip before plugging it back in.
2. **Check the 15A GFCI Breaker**
   - If all receptacles are dead, locate the electrical panel on the front wall.
   - Find the 15A GFCI breaker (labeled "Lighting / USB").
   - If the breaker is tripped, flip it fully OFF, wait 5 seconds, then back ON.

3. **Test Other Receptacles**
   - If one receptacle is dead after reset, try a different one.
   - If other receptacles work, the dead one may have a loose connection — contact service.
4. **Do Not Overload the Circuit**
   - Avoid plugging in multiple high-power devices at the same time.
   - If devices keep shutting off when you plug in new ones, reduce the load.

Interior Lights Not Working

1. **Find the Light Switch**
   - Locate the light switch on the interior wall.
   - Flip the switch to the ON position.
2. **Replace a Burned-Out LED Fixture**
   - If a light is still dark, the LED dome fixture may be burned out.
   - Do not attempt to repair the fixture yourself. Contact service for replacement.
3. **Check the 15A GFCI Breaker**
   - Locate the electrical panel on the front wall, opposite the emergency exit.
   - Find the 15A GFCI breaker (this breaker protects the lighting circuit and optional USB outlets).
   - If it is tripped, switch it OFF and then back ON.
   - If it trips again, contact service (indicates a short in the lighting circuit).

Lights Flickering

Flickering lights usually indicate a loose connection or unstable power supply.

1. **Tighten Breaker Connections (Power OFF)**
   - Turn off all breakers at the electrical panel.
   - Carefully inspect each breaker to confirm its connections are snug.
   - Do not touch bare wires or terminals.
   - If you see a loose wire, do not attempt to tighten it. Contact service.
2. **Check Generator Stability (if using generator)**
   - If using a portable generator, check the fuel level.
   - Ensure the generator is running at steady RPM (should not sound like it's changing speed).
   - If the generator is old or malfunctioning, flickering may continue. Switch to shore power if available.
3. **Reduce Electrical Load**
   - If flickering happens when the A/C is running and someone plugs in a power tool, you may be overloading the generator.
   - Do not run high-power devices (space heater, power tools) simultaneously with A/C.
   - If using shore power, flickering should not occur; contact service.

7.5 Structural, Door & Window Issues

Door Problems

Door Won't Latch or Close

1. Ensure the trailer is level using the stabilizer jacks.
2. Check that nothing is blocking the door frame (tools, debris, bent metal).
3. If the door is hard to close, the hinge may be misaligned:
   - Loosen the hinge bolts slightly (using an adjustable wrench).
   - Gently realign the door so the gap is even on both sides.
   - Tighten the hinge bolts firmly.

4. If the latch mechanism is dirty:
    - Wipe the latch and catch with a dry cloth.
    - Apply a light silicone lubricant spray (not oil or grease).
    - Wipe off excess lubricant.
    - Test the latch.

Door Catch or Latch Is Bent

- Do not attempt to straighten a bent latch. Contact service for a replacement.

Emergency Exit Door Is Stuck

1. Ensure the trailer is level (use stabilizer jacks).
2. Try opening the door slowly. It may just be stiff from lack of use.
3. If it still won't budge, apply penetrating oil (WD-40) around the hinges and wait 10 minutes.
4. Try again gently. Do not force it.
5. If the door remains stuck, contact service. Do not pry or damage the frame.

Window Issues

Window Is Cracked or Damaged

- Do not attempt to repair a cracked polycarbonate window.
- A damaged window compromises the trailer's insulation and weather protection.
- Contact service for replacement. Provide the window size and location.

Water Is Leaking Inside Near the Roof or Windows

1. Dry the interior with towels or a wet/dry vacuum.
2. Inspect the roof exterior for visible cracks, gaps, or holes.
3. If you see a visible opening, contact service immediately.
4. Do not seal the opening yourself; professional resealing is required to prevent further leaks.

Stabilizer Jack Problems

Jacks Are Hard to Turn or Stuck

1. Apply a penetrating oil (WD-40 or similar) generously to the screw threads.
2. Let the oil soak for 10 minutes.
3. Try turning the jack handle slowly. Do not force it.
4. If the jack moves, continue turning until the trailer is fully supported (about 1/4 inch of ground clearance under the trailer frame).
5. If the jack still won't move, do not force it. Contact service for professional help.

Threads Are Damaged or Cracked

- Do not attempt to repair jack threads yourself.
- Contact service. Do not operate the trailer if you cannot lower or raise the jacks safely.

Trailer Sits Uneven on the Ground

1. Use a small level tool or a smartphone level app to check the trailer's position.
2. Place the level on the floor in the center of the trailer.
3. If the bubble is not centered, the trailer is tilted.
4. Turn each stabilizer jack handle to adjust:
    - **Uneven side-to-side:** Extend the jack on the low side until the level shows even.
    - **Front-to-back:** Lower the front hitch jack about 1 degree (1–2 turns) so A/C condensate water drains off the front of the roof, away from the rear entry door. Then engage all four stabilizer jacks.
5. Test after each adjustment. When the trailer is level side-to-side with a slight forward slope, it is ready.

Bench Seating Is Loose or Wobbly

1. Inspect all bolts underneath and around the bench seat.
2. Using an appropriate wrench, tighten each bolt firmly.
3. Do not over-tighten; firm resistance is sufficient.
4. Test the bench by sitting on it and shifting your weight. It should not move.
5. If the bench is still wobbly, a bolt may be missing. Contact service for replacement parts.

7.6 When to Call Service

You can fix many problems yourself. Some problems require professional help. Use this guidance to decide.

You CAN Fix These Problems Yourself

- Tripped breaker (reset it)
- Clogged air filter (clean it)
- Unlevel trailer (adjust stabilizer jacks)
- Dirty latch (clean and lubricate)
- Frozen stabilizer jack (apply penetrating oil)
- Loose bolt or bench seat (tighten with wrench)
- Light switch OFF (turn it ON)

You SHOULD Call Service For These Problems

- **Error codes on the A/C panel** (especially F1–F4)
- **Refrigerant leak** (visible oil stains on A/C unit)
- **Electrical short or repeated breaker tripping**
- **Burned-out LED fixtures**
- **Breaker connections that look loose** (do not attempt to tighten yourself)
- **Cracked or damaged windows or door**
- **Water leaking from roof** (interior sealing required)
- **Bent latch, hinge, or door frame**
- **Damaged stabilizer jack threads**
- **Any problem with the refrigerant system or compressor**

Contact Information

ATS ShieldSafe Service Hotline:

- **Phone:** 800.747.9953
- **Hours:** 24 hours a day, 7 days a week
- **What to Have Ready:**
  - Your ClimateRig serial number (on the trailer ID plate, street side, near the front bottom)
  - Description of the problem and any error codes displayed
  - Date and time the problem started
  - Current location (if on a job site)

Authorized Service Providers:

- Visit climaterig.com/service-network for a list of authorized service centers in your region.
- Only use ATS ShieldSafe–authorized providers to maintain warranty coverage.

Chapter 8: Towing & Transport

The ClimateRig is designed to be towed behind a standard half-ton pickup truck. This chapter explains how to safely prepare the trailer for towing, hitch it properly, connect lights and brakes, and drive with it safely.

8.1 Tow Vehicle Requirements

Before towing the ClimateRig, your truck must meet these requirements. Using an inadequate vehicle puts workers and equipment at risk.

Minimum Tow Vehicle Specifications

Tow Vehicle Class: Half-ton pickup truck or equivalent

- Examples: Ford F-150, Chevrolet Silverado 1500, Ram 1500, or comparable full-size pickup
- **Minimum Towing Capacity:** 5,000 lbs
- **Hitch Receiver:** Class II or higher (2" receiver opening minimum)
- **Hitch Ball:** 2-5/16" diameter, rated for at least 10,000 lbs

Required Equipment on Tow Vehicle

Your truck must have the following items before towing:

1. **Electric Brake Controller** — A device mounted in the cab that applies the trailer's electric brakes proportionally as you brake. This is required by law and essential for safe stops.
2. **Proper Hitch Assembly** — A receiver hitch mounted to the truck frame with:
   - A 2-5/16" ball mount rated for at least 10,000 lbs
   - A class II or higher receiver rated for trailer towing
3. **Adequate Cooling** — Your truck's transmission and radiator must be in good condition. Towing a 2,500-lb trailer puts extra strain on the cooling system. Check your truck's maintenance schedule for towing recommendations.
4. **Functioning Lights** — All truck brake lights, turn signals, and running lights must work correctly. These will be mirrored by the trailer's lights via the 7-pin connector.

Tongue Weight Calculation

The ClimateRig has an estimated tongue weight of 250–375 lbs. This is the downward force on the hitch ball. Your truck's hitch and ball must be rated to handle this load. Most class II hitches easily support this weight, but always verify your truck's hitch rating.

8.2 Hitch & Coupler Setup

The ClimateRig uses a 2-5/16" ball coupler. This section explains how to hitch the trailer safely.

Before You Hitch

1. **Park on level ground.** Position the truck and trailer so the hitch ball aligns with the coupler opening.
2. **Lower the trailer coupler.** If the coupler is above the ball height, crank the front stabilizing jack counterclockwise to lower the coupler onto the ball. Do not allow the coupler to swing freely.
3. **Position the truck.** Back the truck slowly until the hitch ball is directly under the coupler opening.

Coupling Procedure

1. **Align the coupler.** The coupler should be centered over the hitch ball and slightly higher (1–2 inches).
2. **Lower the coupler onto the ball.** Crank the stabilizing jack handle counterclockwise to lower the coupler until it seats fully on the ball. You should hear or feel a solid "thunk" when the coupler bottoms out.
3. **Latch the coupler.** The coupler has a manual latch lever on its underside.
   - Grasp the latch lever firmly.
   - Rotate it to the LOCKED position (lever should be parallel to the coupler).
   - The latch should click or lock into place with no movement.
4. **Verify the latch.** Tug the trailer tongue firmly to ensure the coupler does not lift or shift on the ball. There should be zero play.
5. **Install the safety pin.** A secondary safety pin prevents the latch from opening accidentally.
   - Locate the pin hole in the coupler latch arm.
   - Insert the safety pin through the hole and into the latch bracket.
   - Secure the pin with a cotter pin or clip (do not lose this).

For additional towing-safety warnings, see **Chapter 2: Safety Information**.

8.3 Safety Chains & Breakaway Switch

Safety chains prevent the trailer from separating from the truck if the coupler fails.

Installing Safety Chains

The ClimateRig is equipped with two safety chains attached to a welded eye on the trailer tongue.

1. **Identify the chains.** The trailer has two chains looped around the tongue and fitted with S-hooks at the free ends.
2. **Cross the chains under the tongue.** This is critical for safety.
   - Take the left chain and cross it diagonally to the right side of the truck's frame.
   - Take the right chain and cross it diagonally to the left side.
   - Crossing prevents the tongue from dropping if the coupler fails.
3. **Attach the chains to the truck frame.**
   - Hook each S-hook to a fixed point on the truck's frame (not the bumper). Many trucks have towing loops or clevis connections for this purpose.
   - The chains should be taut but allow for 12–18 inches of slack when the rig is level. This slack absorbs shock loads without unnecessary strain.
4. **Verify security.** Tug each chain firmly to ensure the hooks are locked onto the frame mounting point and will not slip.

Breakaway Switch

The ClimateRig is equipped with an electric breakaway switch. This is a safety device that automatically applies the trailer brakes if the trailer separates from the truck.

- **Location:** The breakaway switch is typically mounted on the trailer tongue near the coupler.
- **Cable:** A lanyard cable attaches the switch to a fixed point on the truck frame.
- **Operation:** If the trailer separates, the cable pulls and triggers the switch, applying full braking power to the trailer's electric brakes.
- **Inspection:** Before towing, verify that the cable is routed safely (not kinked or pinched) and that the switch is mounted securely.

WARNING: TRAILER SEPARATION

If the safety chains fail and the trailer separates, the breakaway switch is your only protection. Always inspect chains and the breakaway cable before towing.

8.4 Lighting & Signals

The ClimateRig has a 7-pin trailer connector for lights and electric brakes. All lights must be tested before every tow.

7-Pin Connector Pinout

The ClimateRig's rear lights and brake signal connect via a standard 7-pin connector. Truck's harness must match.

Pin	Function	Wire Color
1	Right Turn / Brake Light	Brown
2	Ground / Return	Black
3	Left Turn / Brake Light	Yellow
4	Right Running Light	Green
5	Ground / Return	Black
6	Left Running Light	White
7	Electric Brake Signal	Red

Table 8-1: 7 Pin Connector

Connecting the Light Cable

1. **Prepare the truck connector.** Ensure the truck's 7-pin connector is clean and dry. Moisture causes poor electrical contact.
2. **Align the plug.** The 7-pin plug on the trailer cable has a keyway (a notch or ridge that prevents mis-insertion). Align the plug with the truck's receptacle socket.
3. **Insert the plug firmly.** Push the plug straight into the socket until you hear or feel a click. The connection should be snug with no gaps.
4. **Secure any strain relief.** Some harnesses have a locking collar or clip. Tighten or secure this to prevent the plug from vibrating loose.

Testing All Lights Before Towing

Perform this test every time you tow. Have a helper or move the truck to a position where you can see the trailer lights.

1. **Turn on the truck's headlights.** The trailer's rear running lights should illuminate (white and green lights on the back corners).
2. **Apply the truck's brakes.** The trailer's brake lights should illuminate (red lights at the rear should glow brighter than running lights, or turn red).
3. **Test the right turn signal.** The right rear light should flash on and off. Watch for steady flashing about once per second.
4. **Test the left turn signal.** The left rear light should flash on and off at the same rate.
5. **Turn off the signals.** All lights should return to their baseline state (running lights on, turn lights off).

Troubleshooting Dim or Dark Lights

If lights do not work or are dim:

Symptom	Likely Cause	Solution
All lights dark	7-pin connector not fully inserted	Unplug and re-insert connector firmly. Check for corrosion or dirt inside the connector.
All lights dark	Truck battery weak or dead	Check truck battery voltage (12V nominal). Charge battery and retest.
One side only lights	Broken wire in trailer harness	Inspect the 7-pin cable for cuts, crushed sections, or fraying. Repair or replace the cable.
Dim lights	Corroded connection pins	Unplug the connector. Clean both male and female pins with a dry cloth or light abrasive. Reinsert.
Brakes not responding	Electric brake signal wire loose	Check pin 7 (red wire) in the 7-pin connector. Verify continuity with a voltmeter if available.

Table 8-2: Troubleshooting

WARNING: TRAILER LIGHTING

Never tow with non-functional lights. Trailer lights are required by law and are essential for the safety of you and other drivers.

8.5 Pre-Tow Checklist

Before every towing operation, perform this complete checklist. Do not skip any step.

Trailer Preparation (30 minutes before departure)

- ☐ **Inspect the hitch coupler.** Verify that the latch is locked and the safety pin is installed.
- ☐ **Verify safety chains.** Check that both chains are crossed under the tongue and hooked to the truck frame. Ensure at least 12 inches of slack when level.
- ☐ **Retract all stabilizing jacks.** Crank all four manual screw-down stabilizing jacks fully upward (counterclockwise) until they are flush with the trailer frame. Do not leave jacks partially lowered, as this can cause swaying or ground contact.
- ☐ **Remove wheel chocks.** Remove all wheel chocks and store them securely in the tow vehicle.
- ☐ **Close and lock the rear door.** The rear hinged door must be fully shut and latched or locked. Check that the step is secure.
- ☐ **Secure all interior items.** Remove or lash down any loose equipment, benches, or stored items. Items moving inside the trailer during towing can shift weight and cause instability.
- ☐ **Turn off the A/C units.** Both Fogatti A/C units must be OFF. Never tow with the A/C running.
- ☐ **Disconnect electrical power.** Unplug the L14-30 connector from the generator or shore power. Ensure the connector is coiled and stored safely; it should not drag on the ground.
- ☐ **Inspect tires and wheel well.** Check tire pressure against Dexter axle specifications (see your tire placard). Look for uneven wear, bulges, or cuts. Verify that no dirt, mud, or debris is packed around the wheels or brakes. Verify tire age (DOT date code) is less than five years. Inspect all sidewalls for cracks, bulges, or weather checking.
- ☐ **Walk around the trailer.** Look for loose panels, missing fasteners, or damage that occurred during operation or storage. Note any issues for later repair.

Truck & Hitch Verification (at the truck)

- ☐ **Verify the hitch ball is clean and dry.** Wipe the ball with a dry cloth. A corroded or rusty ball may cause poor coupler grip.
- ☐ **Ensure the truck's electric brake controller is installed and set correctly.** Refer to your brake controller's manual for adjustment settings. Most controllers should be set to a gain of 6–8 and bias of 0–2 to provide proportional braking to the trailer.
- ☐ **Test the truck's lights.** Verify that headlights, tail lights, brake lights, and turn signals are working.
- ☐ **Check the truck's fluid levels.** Confirm adequate coolant (radiator) and transmission fluid. Towing generates extra heat and fluid consumption.
- ☐ **Verify tire pressure on the tow vehicle.** Check the truck's tires. Under-inflation increases rolling resistance and fuel consumption.

Coupler & Lights Connection

- ☐ **Back the truck to the trailer.** Slowly align the hitch ball with the coupler opening.
- ☐ **Lower the coupler onto the ball and latch it securely.** Perform steps from Section 8.2 above.
- ☐ **Insert the 7-pin light connector.** Plug the trailer's 7-pin connector into the truck's matching socket. Verify a firm click or lock.
- ☐ **Test all lights.** Follow the light test procedure in Section 8.4 above.

Final Safety Verification

- ☐ **Verify the breakaway cable.** Ensure the breakaway switch cable is routed safely and the lanyard is attached to the truck frame.
- ☐ **Check the trailer is level.** Use a level on the trailer frame or visually assess that the trailer is not tilted side-to-side. The level indicates whether the site was level when parked or if the truck bed is sitting lower due to tongue weight.
- ☐ **Perform a backing test.** Back the rig slowly (at walking speed) for 20–30 feet, then forward. Listen and feel for any unusual vibrations or resistance. If something feels wrong, stop and re-inspect.
- ☐ **Review your route.** Check the weather, road conditions, and any low-clearance obstacles (bridges, overpasses). The trailer is 7 feet wide and up to 12.2 inches tall with the A/C units. Standard roads and bridges have ample clearance, but some parking structures or unmarked overpasses may not.

8.6 Driving Guidelines

Safe towing depends on your driving behavior, vehicle condition, and road awareness.

Speed & Following Distance

- **Maximum speed:** Never exceed posted speed limits. For trailer towing, a maximum of 55 mph is recommended. Towing at high speed increases wind resistance, fuel consumption, and stopping distance.
- **Following distance:** Increase your following distance to at least 8–10 seconds behind the vehicle ahead. At 55 mph, this equals roughly 250 feet. This extra distance gives you time to brake gradually and avoid jackknifing.
- **Loaded weight:** The ClimateRig weighs approximately 2,500 lbs dry. With water, tools, or other items loaded, you may approach 4,500–5,500 lbs (within the half-ton rating). Heavier loads require longer braking distances.

Lane Changes & Merging

- **Use turn signals early.** Activate your turn signal at least 200 feet (several seconds) before changing lanes. Trailer towing is less agile than a truck alone, and other drivers need extra warning.
- **Avoid sudden maneuvers.** Abrupt steering or braking can cause the trailer to sway or fishtail. Make smooth, gradual adjustments.
- **Do not cut corners.** Wide turns are necessary to prevent the trailer wheels from tracking over the curb or hitting obstacles. Allow extra space when turning at intersections.
- **Avoid weaving.** Do not rapidly change lanes to pass slower traffic. Trailer sway increases with each lane change.

Driving on Hills

- **Downhill:** Avoid riding the brakes on long downgrades. Instead, shift to a lower gear (if automatic, shift to 3rd gear or lower) and use engine braking. Then tap the brakes gently as needed. Continuous hard braking will overheat the brakes and cause brake fade. Check your electric brake controller's adjustment to ensure the trailer brakes are being applied proportionally.

- **Uphill:** Accelerate smoothly and avoid excessive engine strain. If the truck slows below a comfortable cruising speed, down-shift and maintain steady RPM. Do not brake while ascending; coast to a safe speed if needed.

Adverse Weather & Road Conditions

- **Rain:** Reduce speed by 10–15 mph. Wet roads reduce tire grip, and the trailer's weight can increase hydroplaning risk. Increase following distance to 10–12 seconds. Do not use cruise control in rain.
- **Wind:** Strong crosswinds (above 30 mph gusts) can push the trailer sideways. Grip the steering wheel firmly and reduce speed. If the trailer sways, do not brake suddenly; instead, ease off the accelerator, correct your steering gently, and slow down gradually.
- **Ice and snow:** Avoid towing in icy conditions if possible. If you must tow, reduce speed to 30–40 mph, avoid braking, and rely on engine braking. Use extreme caution on bridges and overpasses, which freeze before regular road surfaces.
- **Gravel and unpaved surfaces:** Reduce speed to 20–30 mph on gravel or dirt roads. Loose surface material reduces tire grip and increases stopping distance. Avoid sudden steering corrections.

Backing the Trailer

Backing a trailer is difficult and risks jackknifing or hitting objects.

1. **Avoid backing if possible.** Plan your route so the trailer is pulled forward into position, not backed in.
2. **If backing is necessary:**
    - Use a spotter (another person) who stands where you can see them (not behind the trailer).
    - The spotter guides you with hand signals or radio communication.
    - Back slowly at walking speed (1–2 mph).
    - Make very small steering corrections. A small turn of the steering wheel translates to a large movement of the trailer rear.
3. **After backing:** Pull forward and realign the rig. Do not continue backing if the angle is tight. It is safer to pull forward and reposition than to risk jackknifing.

Rest Stops & Routine Checks

- **Every 2–3 hours of driving:** Stop and perform a visual inspection.
    - Check tire pressure and condition (especially temperature; feel the tire sidewalls for excess heat).
    - Verify that all lights are still working (have a helper check tail lights and brake lights).
    - Look for any visible damage to the trailer or hitch.
    - Ensure the 7-pin connector is still fully seated.
- **Parking between tows:** Park on level, firm ground. Lower the rear stabilizer jacks until the trailer is level side-to-side and front-to-back. Lower the front hitch jack about 1 degree (1–2 turns) so A/C condensate drains off the front of the roof, away from the rear door. Engage all four stabilizer jacks. Disengage the hitch coupler if parked for more than a few hours. This relieves pressure on the ball and joint and extends their lifespan.

Fuel Economy & Towing

Towing reduces fuel economy significantly. Expect 15–25% lower fuel economy than driving the truck alone, depending on terrain, speed, and payload. Plan fuel stops accordingly, especially on long tows through remote areas.

Summary

Safe towing of the ClimateRig requires:

1. A properly equipped half-ton truck with a class II or higher hitch and electric brake controller.
2. Correct hitching, latching, and safety-chain installation.
3. Functioning 7-pin lights and brake signals, tested before every tow.
4. Completion of the pre-tow checklist without exception.
5. Smooth, gradual driving; reduced speed; and increased following distance.
6. Regular rest stops and visual inspections during long tows.

Never compromise on these points. Improper towing puts your workers, equipment, and other road users at serious risk.

WARNING: TOWING SAFETY

Towing without proper equipment, lights, or brakes is unsafe and illegal. Never tow the ClimateRig behind a vehicle that does not meet these requirements. **Never tow with workers inside the trailer.**

Chapter 9: Warranty & Service

9.1 Warranty Coverage Overview

Your ClimateRig is covered by the **ATS ShieldSafe Standard Limited Warranty**, which protects your investment across multiple components. Warranty coverage varies by component type and application.

The warranty applies only to the **first retail customer**. It is not transferable to subsequent owners.

Warranty Coverage Table

Component	Coverage Period	What's Covered
CellTech™ Panels (walls, roof, floor, ramp)	10 years	Material defects, workmanship, panel delamination
Galvanized Steel Frame	10 years	Material defects, workmanship, corrosion (under normal use)
Dexter Axles	5 years	Manufacturer warranty on axle assembly and components
A/C Units & Electrical System	2 years	Air conditioners, circuit breakers, interior lighting, power inlets
Additional Components (doors, windows, hinges, trim, tracks, lights)	1 year	Material and workmanship defects
Paint & Finish	5 years (pro-rata)	Paint defects; cost shared between ATS ShieldSafe and customer after year 2

Table 9-1: Warranty

From the date of shipment — This is when your warranty period begins. Keep your proof of purchase and shipment documentation for your records.

Exclusive remedy — If a covered component fails, ATS ShieldSafe will repair or replace it at our option. This is your sole and exclusive remedy for a warranty claim.

9.2 What Is Covered

Your warranty covers defects in material and workmanship when your trailer is:

- **Properly maintained** according to the maintenance schedule in Chapter 6
- **Operated normally** for its intended use (heat-stress management and worker cooling on job sites)
- **Free from accidents and collisions**
- **Loaded legally** with uniformly distributed weight not exceeding the labeled GVWR
- **Stored and towed** on well-maintained public roads

Covered Items by Warranty Tier

10-Year Coverage (Panels & Frame)

- Wall panels, roof panels, floor panels, and ramp
- All-steel galvanized frame structure
- Panel delamination or separation from the adhesive core

- Corrosion and rust on frame (under normal service conditions)

5-Year Coverage (Axles)

- Dexter axle assemblies
- Suspension components and wheel bearings
- Electric brake assemblies and brake wiring

2-Year Coverage (A/C & Electrical)

- Fogatti InstaCool Ultra air-conditioning units (both rooftop units)
- Electrical panel, circuit breakers, and wiring
- Interior LED lighting fixtures
- Power inlet connections and devices

1-Year Coverage (Additional Components)

- Doors, door latches, and hinges
- Polycarbonate windows
- E-tracks and mounting hardware
- Interior trim and extrusions
- Steps and ramps

9.3 What Is NOT Covered

The following **exclusions and limitations** apply to all warranty coverage:

Excluded Damage Types

- **Accidents, collisions, or impact damage** — Warranty does not cover damage from crashes, towing accidents, or impacts
- **Abuse or misuse** — Overloading, improper operation, racing, or use outside the trailer's design capacity
- **Alterations or modifications** — Any unauthorized changes to the structure, electrical system, or A/C system
- **Improper installation or repair** — Damage caused by installation not performed by qualified technicians or repairs not done by an authorized service provider
- **Improper storage or preparation** — Damage from inadequate winterization, outdoor storage without protective covering, or exposure to extreme environmental conditions
- **Normal wear and tear** — Expected degradation from regular use (paint fading, minor scuff marks, seal wear)
- **Unauthorized modifications or after-market products** — Installation of non-OEM components or aftermarket accessories
- **Customer-supplied components** — ATS ShieldSafe does not warrant parts you provide
- **Corrosive environments** — Exposure to harsh chemicals or saltwater

Frame Warranty Exclusion: Corrosive Substances

The galvanized steel frame warranty **does NOT cover** corrosion caused by exposure to:

- Hydrochloric acid (HCl)
- Sulfuric acid (H_2SO_4)
- Nitric acid (HNO_3)
- Sodium hydroxide (NaOH)
- Chloride salts (rock salt, sea salt, de-icing chemicals)
- Bleach (sodium hypochlorite)
- Ammonia (NH_3)
- Sulfur compounds

If your job site uses these materials, inform ATS ShieldSafe before purchasing to discuss protective coatings or special warranty terms.

A/C & Electrical Exclusions

- **Physical damage** (dents, cracks, water intrusion from improper cleaning)
- **Freeze damage** — Damage from freezing refrigerant or improper winterization
- **Misuse or improper operation** — Operating the A/C without adequate power supply or exceeding electrical capacity
- **Unauthorized repairs** — Repairs or modifications by anyone other than a certified technician
- **Corrosive environment exposure** — Operation in industrial settings with high corrosive-gas or salt-spray exposure

9.4 How to File a Warranty Claim

If you believe a covered component has failed due to a manufacturing or workmanship defect, follow these steps:

Step 1: Identify the Problem

Determine which component is affected (e.g., A/C unit, frame, panel, electrical system, door, window). Refer to Chapter 7 (Troubleshooting) for diagnosis help.

Step 2: Report the Defect — Notice Deadlines

NOTICE: — You must notify ATS ShieldSafe of warranty issues within the required timeframe, or your claim will be forfeited.

- **10 days from receipt** — If the defect is a delivery/manufacturing defect visible upon receipt
- **30 days from discovery** — If the defect is discovered after receiving the trailer

Contact ATS ShieldSafe Warranty Department:

- **Phone:** 800.747.9953
- **Email:** Support@ClimateRig.com
- **Mail:** ATS ShieldSafe, 610 West 6825 South, Midvale, UT 84047

Step 3: Submit Written Documentation

Provide the following information:

- **Vehicle Identification Number (VIN)** — Located on the street side, near the front bottom of the trailer; see Chapter 3 (Serial Number & Registration)
- **Purchase date and shipment date**
- **Description of the defect** — When did it first appear? What is the trailer used for? Is it still under normal operation?
- **Photos** — Clear images of the damaged or defective component(s)
- **Proof of purchase** — Original receipt or bill of sale
- **Maintenance records** — Copies of maintenance logs showing the trailer has been properly maintained (see Appendix D for log templates)

Step 4: Inspection & Approval

ATS ShieldSafe will:

1. **Review your claim** — The warranty department will evaluate whether the defect is covered
2. **Request additional information** if needed (photos, operation history, site conditions)
3. **Approve or deny** the claim and notify you within **10** business days
4. **If approved:** Provide instructions on where to deliver or ship the trailer (see Step 5 below)

NOTICE: — ATS ShieldSafe warranty department has sole authority to decide all warranty claims. All decisions are final.

Step 5: Repair or Replacement Location

- **ATS ShieldSafe chooses the repair location** — This may be an authorized service center near you or at an ATS ShieldSafe facility
- **Transportation is your responsibility** — You must arrange and pay for shipping or towing the trailer to the designated repair location
- **Repairs are at no cost** — If the claim is approved, labor and parts are covered. Only transportation costs are your responsibility

Step 6: Turnaround & Return

- **Replaced components** — ATS ShieldSafe retains any replaced or repaired parts for **120 days** for inspection. You must pick up or request return of the replaced parts within **14 days**; otherwise, they will be discarded
- **Warranty repairs do NOT extend your warranty period** — The original warranty end date does not change

Step 7: Warranty Claim Deadline

You must bring any warranty claim **within 24 months from the date the defect occurs**. Claims filed after this deadline will be denied.

9.5 Authorized Service Network

Warranty repairs must be performed by **ATS ShieldSafe or an authorized service provider**. Repairs performed by unauthorized technicians will **void the warranty**.

Finding an Authorized Service Center

Call **ATS ShieldSafe at 800.747.9953** to:

- Locate the nearest authorized service center
- Schedule a warranty repair appointment
- Verify a service center's authorization status before authorizing work

Service Center Authority

Only an authorized service provider can:

- Diagnose warranty defects
- Replace covered components under warranty
- Perform repairs that do not void the warranty
- Service the refrigerant A/C system (certified technicians only)

Non-Warranty Repairs

If your trailer needs repairs **not covered by warranty** (accidents, abuse, modifications, or out-of-warranty components), you may use any qualified technician. However, any non-authorized repairs may affect your remaining warranty coverage.

9.6 Replacement Parts & Accessories

To order replacement parts, spare components, or optional accessories, contact ATS ShieldSafe:

Phone: 800.747.9953 **Hours:** 24 hours a day, 7 days a week

When Ordering Parts

Have ready:

- **Vehicle Identification Number (VIN)** — Found on the street side, near the front bottom of the trailer
- **Part description** — The component name and location (e.g., "left-side polycarbonate window, front section")
- **Quantity** — How many parts you need

Locating Parts

Refer to:

- **Appendix C: Complete Parts List with Part Numbers** — Lists every component with manufacturer part numbers
- **Bill of Materials (BOM)** — See your original equipment documentation

In-Warranty Parts Replacement

If a component fails under warranty, do NOT purchase replacement parts yourself. Contact ATS ShieldSafe (step 4 above) to avoid paying out-of-pocket for a covered component.

The ClimateRig is engineered as a complete system. Every component — from the CellTech™ panel hardware to the Fogatti A/C mounting seals — is selected and tested to work together under demanding jobsite conditions. Substituting aftermarket or third-party parts may compromise that fit, reduce cooling performance, or introduce safety risks that the original design was built to prevent.

Genuine replacement parts are manufactured to the same specifications as the originals and are backed by ATS Shield-Safe's quality assurance process. Using genuine parts also helps protect your warranty coverage. Repairs performed

with non-approved components may not be covered under the CellTech 10-year panel and frame warranty or the ATS ShieldSafe limited warranty.

When ordering replacement parts, have the following information ready: your trailer's VIN or serial number, the part description or location on the trailer, and your original purchase date. This helps the service team identify the correct part for your specific build.

To place an order or confirm part availability, contact ATS ShieldSafe directly or visit your authorized service provider.

Key Warranty Terms & Limitations

Sole and Exclusive Remedy — Warranty repair or replacement is your only remedy. ATS ShieldSafe will not pay for:

- Damages to other equipment caused by trailer failure
- Lost business or rental income
- Transportation, shipping, or travel costs (except as noted above)
- Medical or health costs

Liability Limit — ATS ShieldSafe's total liability for any warranty claim is capped at the **original purchase price of the trailer**.

Implied Warranties Disclaimer — ATS ShieldSafe disclaims all implied warranties, including fitness for a particular purpose and merchantability. Your exclusive remedy is stated above.

First Retail Customer Only — This warranty applies to the original retail purchaser only and may not be transferred or assigned to any subsequent owner.

What to Keep for Your Records

Maintain all documentation to support any future warranty claim:

1. **Proof of purchase** — Original invoice or bill of sale
2. **Shipping date** — Confirm when the trailer was delivered to you
3. **Vehicle Identification Number (VIN)** — Record this in a safe place
4. **Maintenance logs** — Completed service records (see Appendix D)
5. **Warranty documentation** — Keep this manual and any written warranty statement provided by ATS ShieldSafe
6. **Receipts for maintenance services** — Professional service records help prove proper maintenance

Questions About Your Warranty?

Contact ATS ShieldSafe:

Phone: 800.747.9953 **Website:** www.climaterig.com **Email:** Support@ClimateRig.com

The ATS ShieldSafe customer service team can answer warranty questions, help you file a claim, and locate authorized service centers in your area.

Summary

Your ClimateRig is covered by a comprehensive multi-tier warranty protecting panels and frame (10 years), axles (5 years), A/C and electrical systems (2 years), and additional components (1 year). To file a claim, notify ATS ShieldSafe within 10–30 days of discovering a defect, provide documentation, and work with authorized service providers. Always keep your proof of purchase, VIN, and maintenance records. For claims or service needs, call **800.747.9953**.

Chapter 10: Regulatory Compliance

Overview

The ClimateRig is designed to help employers manage heat-related hazards in the workplace. This chapter explains the regulatory framework governing heat-illness prevention and worker safety, and how the ClimateRig supports compliance with current and proposed standards.

Important: The ClimateRig is a tool to assist with compliance, not a guarantee of compliance. Employers remain responsible for implementing comprehensive heat-safety programs that include work-rest schedules, hydration, medical surveillance, and WBGT monitoring—all of which the ClimateRig supports but does not replace.

10.1 OSHA Heat-Illness Prevention

Current Requirements: OSHA General Duty Clause

Under Section 5(a)(1) of the Occupational Safety and Health (OSH) Act, all employers have a "general duty" to provide a workplace free from recognized hazards likely to cause death or serious physical harm. Heat illness is a recognized hazard in outdoor and indoor work environments.

Current OSHA guidance on heat-illness prevention requires employers to:

- Recognize heat as a serious occupational hazard
- Implement engineering controls (shade, ventilation, cool rest areas)
- Establish administrative controls (work-rest schedules, job rotation, hydration)
- Provide personal protective equipment and medical monitoring
- Train workers and supervisors on heat-stress recognition and response

The ClimateRig fulfills the engineering control requirement by providing:

- **32,000 BTU cooling capacity** (two Fogatti 16,000 BTU units) to rapidly cool workers
- **128 square feet (7' × 21')** of climate-controlled interior space
- **Capacity for up to 18 workers** to rest and recover simultaneously
- **Active air-conditioning** (non-evaporative), effective even in high-humidity climates where evaporative cooling fails
- **Rapid setup** for immediate deployment on high-WBGT job sites

Proposed OSHA Heat Injury and Illness Prevention Standard

Rulemaking Status (as of February 2026)

OSHA has proposed a comprehensive **Heat Injury and Illness Prevention Standard** (published in the Federal Register; Docket No. OSHA-2021-0009). The comment period closed on December 30, 2024, and public hearings are scheduled for June–July 2025. **The final rule is still pending as of this manual's publication date.**

If this standard is finalized, it will apply to all employers in general industry, construction, maritime, and agriculture sectors where OSHA has jurisdiction. It will establish specific, measurable requirements for heat-hazard management.

Key Proposed Requirements

The proposed standard requires employers to:

1. **Develop a written heat-illness prevention plan** that identifies heat hazards and control measures
2. **Establish a threshold temperature or WBGT index** at which enhanced heat-safety measures begin
3. **Provide access to shade and cool rest areas** during recovery periods
4. **Implement mandatory work-rest schedules** based on environmental heat stress and worker exertion
5. **Ensure access to adequate water and electrolyte drinks**
6. **Establish a medical surveillance program** to monitor for early signs of heat illness
7. **Conduct WBGT monitoring** or use approved heat-stress assessment methods
8. **Train workers and supervisors** on heat-illness recognition, prevention, and response

How the ClimateRig Supports Compliance

The ClimateRig directly supports compliance with proposed heat-protection standards:

Proposed Requirement	How ClimateRig Supports It
Shade and cool rest areas	Provides 128 sq ft of air-conditioned interior; eliminates dependence on tarps or temporary shade structures
Work-rest schedule enforcement	Provides designated cooling station where workers can recover during mandated rest periods
Medical assessment	Offers controlled environment for monitoring workers for heat-stress symptoms
WBGT monitoring integration	Each A/C unit's control panel displays interior temperature; workers can reference current conditions and pace work accordingly
Rapid deployment	Can be set up in minutes on any level ground with available power, enabling responsive heat-stress management

Table 10-1: Compliance

Note on Compliance: Use the ClimateRig as part of a comprehensive heat-safety program. Do not assume the ClimateRig alone makes your operation OSHA-compliant. Your employer must still conduct WBGT monitoring, establish work-rest schedules, track incidents, and train your workforce.

10.2 NFPA 1584 Alignment

Standard Background

NFPA 1584 is the Standard on the Rehabilitation Process for Members During Emergency Operations and Training Exercises, developed by the National Fire Protection Association. It establishes rehabilitation protocols for firefighters, rescue personnel, and other emergency responders exposed to extreme heat, heavy exertion, and physiological stress.

ClimateRig Alignment with NFPA 1584

The ClimateRig meets the core requirements of NFPA 1584:

- **Designated rehab area:** A climate-controlled zone separated from the hot work environment
- **Rest duration:** Supports the 10-minute minimum recovery period mandated by NFPA 1584
- **Active cooling:** Air-conditioning lowers core body temperature faster than passive rest
- **Medical observation:** Enclosed space allows para-medics or safety personnel to monitor vital signs
- **Capacity:** Up to 18 personnel can recover simultaneously, suitable for large-scale emergency operations
- **Environmental control:** Maintains consistent interior temperature regardless of ambient conditions

NFPA 1584 is typically applied in fire service, HazMat, and emergency-response contexts. If your organization operates under NFPA standards, the ClimateRig provides a ready-made rehabilitation station that simplifies compliance and accelerates worker recovery.

10.3 Department of Transportation (DOT) Compliance

Trailer Towing Requirements

The ClimateRig is a towed trailer that must comply with Department of Transportation towing safety standards. The ClimateRig meets or exceeds all applicable DOT requirements:

Structural & Component Compliance

Component	Standard	ClimateRig Specification	Status
Axles	DOT-approved suspension	Tandem Dexter, 3,500 lbs each (7,000 lbs GAWR)	Compliant
Brakes	Electric brakes on all axles	2 × electric brake units	Compliant
Lights & Reflectors	FMVSS 108 (lighting)	7-pin connector, standard rear lights + reflectors	Compliant
Safety Chains	Required coupling safeguard	Installed (specifications per DOT)	Compliant
VIN Plate	Vehicle identification	Street side, near front bottom, per DOT	Compliant
Hitch	Rated capacity ≥ GVWR	2-5/16" ball, 15,000 lb coupler (5-pos. adjustable)	Compliant

Table 10-2: Structural

Tow Vehicle Requirements

The ClimateRig is rated as **half-ton towable**, meaning it can be legally towed by a half-ton (1/2-ton) pickup truck or equivalent-capacity vehicle. However, you must verify that your tow vehicle meets minimum requirements:

- **Towing Capacity:** Minimum 3,500 lbs (ClimateRig tongue weight ~250–375 lbs)
- **Hitch Class:** Class II or III, with proper ball size (2-5/16")
- **Brake Controller:** Electric trailer brake control is recommended for safe braking
- **Licensing:** No commercial driver's license (CDL) required for towing the ClimateRig (weight below CDL threshold in most states)

State-Specific Towing Laws

Towing regulations vary by state. Before towing, verify that your state complies with:

- DOT lighting requirements (brake lights, turn signals, reflectors)
- Speed limits for towed equipment
- Mirror and visibility requirements
- Any additional state-specific trailer registration or inspection rules

Contact your state's Department of Transportation or local motor vehicle office for current requirements.

10.4 State-Specific Requirements

California OSHA (Cal/OSHA) Heat Illness Prevention Standard

California has the most stringent state-level heat-illness prevention requirement: **8 California Code of Regulations (CCR) Section 3395**, the Heat Illness Prevention Standard.

Cal/OSHA Requirements (Simplified)

When outdoor temperatures **exceed 80°F (26.7°C)**, employers in California must:

1. **Provide access to shade** (non-evaporative shade; includes tents, trees, or structures)
2. **Ensure employee access to water** and electrolyte-replacement drinks
3. **Enforce mandatory rest periods** (at least 5 minutes in shade every 2 hours of work)
4. **Monitor for heat illness** and respond to symptoms
5. **Provide medical training** for supervisors and workers

How the ClimateRig Exceeds Cal/OSHA Standards

The ClimateRig goes **beyond minimum Cal/OSHA compliance** by providing:

- **Active air-conditioning** (not just passive shade) to cool workers to comfortable temperatures
- **Rapid temperature drop:** Interior can cool to comfortable levels in minutes
- **Protection from sun and heat reflection:** Enclosed structure shields workers from radiant heat
- **Capacity for multiple workers:** 18 simultaneous workers, allowing staggered rest schedules
- **Environmental control:** Operates effectively in all climates (unlike evaporative cooling, which fails in humidity)

Regulatory Position: If you operate in California, use the ClimateRig in combination with your heat-illness prevention plan. The ClimateRig helps satisfy the "shade and cool rest area" requirement, but Cal/OSHA still requires work-rest schedules, hydration management, and medical monitoring.

Other State Requirements

Several states have adopted heat-stress standards or guidance:

- **Arizona:** Occupational Safety and Health Administration (ASHA) and Department of Industrial Safety guidelines recommend work-rest schedules for outdoor workers in high heat
- **Texas:** Generally follows federal OSHA guidance; no state-specific heat standard (as of publication date)
- **Florida:** Follows federal OSHA; some cities (e.g., Miami-Dade) have adopted local heat ordinances for outdoor construction
- **Nevada, New Mexico, Hawaii:** Check with state OSHA divisions for specific requirements

Action: If you operate in multiple states, contact your state's OSHA office or division of occupational safety to confirm current heat-illness prevention requirements. The ClimateRig supports compliance in all cases, but state-specific rules may impose additional documentation or training requirements.

10.5 Refrigerant & Environmental Compliance

R32 Refrigerant Safety & EPA Approval

The ClimateRig uses **R32 refrigerant** in its Fogatti InstaCool Ultra A/C units. R32 is approved under the Environmental Protection Agency's **Significant New Alternatives Policy (SNAP)** Program.

Why R32?

R32 was chosen because:

- **Lower global warming potential (GWP):** ~675 GWP vs. R410A (~2,088 GWP)
- **Higher cooling efficiency:** Better EER (energy efficiency ratio) = lower power draw
- **Environmentally responsible:** Complies with EPA SNAP and international refrigerant phase-down protocols (Montreal Protocol)

Safe Handling

R32 is classified as a **mildly flammable refrigerant**. The Fogatti units are hermetically sealed and designed to prevent leaks. However, observe these safety precautions:

- **Do not attempt to recharge refrigerant yourself.** Refrigerant servicing must be performed by EPA-certified HVAC technicians only.
- **Do not expose the A/C unit to ignition sources** (open flames, cigarettes, welding) while operating.
- **Report refrigerant leaks immediately** to your service provider.
- **Appliance storage:** Store uninstalled units in a well-ventilated area away from ignition sources.

For detailed refrigerant safety information, refer to Chapter 6: Maintenance.

10.6 Electrical Code Compliance

National Electrical Code (NEC)

All electrical wiring, breakers, and outlets on the ClimateRig comply with the **National Electrical Code (NEC)**, the standard for electrical installation in the United States.

Key Electrical Features

Feature	Compliance Standard	Details
Power inlet (L14-30)	NEC Article 406	30A, 125/250V twist-lock connector; weather-sealed
Circuit breakers	NEC Article 240	Square-D QO series; 2×20A (A/C), 15A GFCI (lights/USB), optional 20A 2-pole (heater)
A/C units	NEC Article 422	Rated 115V, 15.5A each; dual 20A breakers provide proper protection
Grounding	NEC Article 250	All metal enclosures bonded to ground bar; 10 AWG stranded copper ground wire
Power outlets (AC)	NEC Article 406	8 × GFCI receptacles (optional Power Bank); GFCI-protected
Conduit & wiring	NEC Article 300, 400	THHN/THWN-2 wire; self-wrap 1/2" black conduit for strain relief

Table 10-3: Electrical Features

Generator Use

If you power the ClimateRig with a portable generator:

1. **Generator capacity:** Ensure the generator can supply at least 30 amps at 120/240V to safely operate both A/C units simultaneously
2. **Grounding:** Ground the generator frame to earth ground (metal rod driven into the ground) and bond the generator's neutral to ground at the first disconnect point only
3. **Cord management:** Use a properly grounded, weather-rated extension cord (minimum 12 AWG for distances > 50 feet)
4. **Ventilation:** Never operate a fuel-powered generator inside or immediately adjacent to the trailer (risk of carbon monoxide [CO] poisoning; see Safety Chapter)

5. **Fuel safety:** Store fuel in approved, labeled containers outside the trailer; never refuel while the generator is running

See Chapter 6: Maintenance for detailed generator setup procedures and Chapter 2: Safety for carbon monoxide hazard warnings.

10.7 Recordkeeping & Documentation

Why Maintain Records

Regulatory agencies and insurance companies require documentation to verify compliance with heat-illness prevention standards. Maintaining organized records protects your organization in several ways:

1. **Audit defense:** Shows you took heat hazards seriously and implemented systematic controls
2. **Incident investigation:** If a heat-illness incident occurs, records demonstrate what precautions were in place
3. **Liability protection:** Documentation reduces potential liability exposure
4. **Program improvement:** Records reveal trends (times of day, job types) where heat illness is most likely

What to Record

Daily Operations Log

Record the following information daily on a job site where the ClimateRig is in use:

- **Date, time, location**
- **Ambient temperature and estimated WBGT index**
- **Number of workers using the ClimateRig during each shift**
- **Duration each worker spent in the cool-down station** (e.g., "3 workers, 10 min each")
- **A/C unit temperature setting and any adjustments**
- **Any mechanical or electrical issues noted**
- **Generator model and fuel level** (if applicable)

Example Log Entry:

```
2026-03-15 | Site: Smith Construction, Phase 2
Ambient temp: 94°F | Est. WBGT: 82°F (high heat advisory)
Workers in ClimateRig: Morning shift 6 workers (avg 12 min each), Afternoon shift 8 workers (avg 15 min each)
A/C set: 72°F | Both units running normally
Generator: Honda EM7000, half tank
Issues: None
```

Maintenance Log

Record all maintenance and inspection activities:

- **Date and time**
- **Work performed** (filter change, breaker inspection, A/C compressor check, etc.)
- **Technician name and certification** (if service provider used)
- **Any defects found or repairs made**
- **Next scheduled maintenance date**

See Chapter 6: Maintenance for detailed maintenance schedules and procedures.

Heat-Illness Incident Log

If a worker shows signs of heat illness (heat exhaustion, heat cramps, heat stroke):

1. **Record the incident immediately:**
   - Date, time, worker name
   - Symptoms observed
   - Actions taken (moved to ClimateRig, provided water, called for medical help)
   - Outcome (recovered on site, transported to medical facility, etc.)
2. **Preserve the record** for at least 5 years (typical OSHA requirement)
3. **Report to your employer or safety manager** and to local OSHA if required by regulation

WBGT Monitoring Log

If your organization conducts WBGT monitoring:

- Record ambient temperature, relative humidity, solar radiation, wind speed
- Calculate or reference official WBGT index (OSHA provides a free WBGT calculator at https://www.osha.gov/heat-exposure/wbgt-calculator)
- Note the time and location of measurements
- Document any work-schedule adjustments made based on WBGT readings

Document Retention

- **Maintenance records:** Keep for the life of the trailer + 2 years after decommissioning
- **Incident logs:** Keep for at least 5 years (check state regulations; some require longer retention)
- **Operating logs:** Keep for at least 1 year; 3 years is recommended

Accessible Documentation Location

Store records in a secure, accessible location:

- On-site in a weather-protected binder or cabinet (hard copy)
- Cloud-based storage (e.g., Google Drive, Dropbox) with password protection (digital copy recommended)
- Mobile-accessible logs (spreadsheet or app) for remote job sites

10.8 Compliance Checklist

Use this checklist to ensure your ClimateRig operation aligns with applicable regulations:

Ongoing Compliance Verification

☐ **OSHA:** Heat-safety program in place; work-rest schedules established; workers trained on heat-illness recognition

☐ **OSHA Proposed Standard (if finalized):** Written heat-illness prevention plan developed and communicated to workers; WBGT monitoring conducted

☐ **NFPA 1584 (if applicable):** Rehabilitation station available; 10-minute rest periods implemented; medical observer on duty during emergency operations

☐ **DOT:** Trailer lights, reflectors, and safety chains functional; tow vehicle verified to meet hitch class and brake-control requirements; state trailer registration current

☐ **Cal/OSHA (if operating in California):** Access to shade/cool rest areas provided; water and electrolyte drinks available; work-rest schedules enforced for temps > 80°F

- ☐ **Electrical Code:** A/C units operating on correct breaker circuits; 15A GFCI breaker protecting lights and optional USB; GFCI receptacles functional (if optional Power Bank installed); grounding verified
- ☐ **Generator (if used):** Properly grounded; sufficient capacity (≥30A, 120/240V); located outside trailer; fuel stored safely
- ☐ **Refrigerant Safety:** No unauthorized recharging attempted; leaks reported to certified technician; servicing scheduled annually or as needed
- ☐ **Recordkeeping:** Daily operations log maintained; maintenance log up-to-date; incident reports filed within required timeframe; records retained per schedule

Before Deployment to a New Work Site

- ☐ Verify state-specific heat or trailer-towing requirements
- ☐ Confirm ambient temperature and WBGT expectations
- ☐ Check generator availability and fuel supply
- ☐ Test A/C units and all electrical systems
- ☐ Brief workers and supervisors on ClimateRig use and heat-illness symptoms

Summary

The ClimateRig is a powerful tool for managing heat-related hazards in compliance with OSHA, NFPA, DOT, state, and electrical codes. However, **compliance is a team effort.** Employers, supervisors, and workers must work together to:

1. Recognize heat as a serious occupational hazard
2. Use the ClimateRig as a designated cooling and recovery station
3. Maintain comprehensive work-rest schedules, hydration, and medical surveillance
4. Keep accurate records of use, maintenance, and incidents
5. Train everyone on heat-illness prevention and emergency response

For questions about regulations applicable to your work site, contact:

- **Federal OSHA:** https://www.osha.gov or 1-800-321-OSHA
- **Cal/OSHA:** https://www.dir.ca.gov/dosh or (844) 4CA-OSHA
- **State OSHA offices:** Search "[Your State] occupational safety"
- **ATS ShieldSafe support:** See Contact Information in Back Matter

Chapter 11: Heat-Stress Management Best Practices — Protecting Workers, Maximizing Time on Tool

This chapter provides actionable guidance for building and operating a comprehensive heat-illness prevention program that keeps your workers safe *and* your project on schedule. Whether you work in construction, oil and gas, emergency services, utilities, mining, or manufacturing, the principles here will help you recognize heat hazards, protect workers, comply with regulations, and use the ClimateRig as both your cornerstone safety asset and your most powerful productivity tool.

The core principle: Every mitigation you deploy — water, shade, fans, cooling PPE, and ultimately the ClimateRig — improves the work-rest ratio your crew can safely maintain. Better ratios mean more productive hours per shift. This concept is called **Time on Tool**, and it transforms heat-stress management from a compliance cost into a measurable return on investment.

NOTICE: The ClimateRig is a powerful tool for heat-stress management, but it is **not a substitute for a complete safety program.** Your organization must still conduct WBGT monitoring, enforce work-rest schedules, track incidents, train workers, and maintain medical oversight.

11.1 Understanding Heat Stress

What Is Heat Stress?

Heat stress occurs when a worker's body cannot cool itself fast enough to maintain a healthy core temperature. In hot environments, the body tries to shed excess heat through sweating and blood-vessel dilation. When the environment is too hot, or when the worker's workload and protective clothing prevent evaporative cooling, the body's core temperature rises. If unchecked, this leads to heat illness.

Risk Factors for Heat Illness

Heat stress depends on multiple factors. A hot day alone may not cause illness if humidity is low and workers are lightly clothed. But the same temperature in high humidity, with heavy exertion and protective equipment, can be dangerous. Key risk factors include:

- **High ambient temperature and humidity** (WBGT is the most accurate combined measure)
- **Direct sun exposure** (no shade or shelter)
- **Heavy physical exertion** (lifting, climbing, digging, operating heavy tools)
- **Non-breathable PPE** (flame-resistant clothing, impermeable suits, rubber gloves/sleeves)
- **Radiant heat sources** (hot equipment, sun-baked surfaces, process heat)
- **Poor acclimatization** (new workers, returning workers, sudden heat waves)
- **Dehydration** (insufficient water intake, diuretic medications, alcohol)
- **Individual factors** (age, fitness, medications, prior heat illness, chronic conditions)

Why It Matters for Productivity

Every one of these risk factors pushes the required work-rest ratio in the wrong direction. Without mitigation, OSHA-aligned work-rest schedules can reduce effective work time by **50% or more** during moderate-to-high heat. Every hour a worker spends on a mandatory cool-down break is an hour not spent on the job. That is lost Time on Tool — and it compounds across every worker, every day, every week of a hot season.

The good news: every mitigation you add pushes the ratio back in your favor. That is why this chapter treats safety and productivity as the same goal.

11.2 Heat-Illness Spectrum: Recognition and First Aid

Heat illness progresses through a spectrum of severity. Early intervention can prevent progression to heat stroke, a life-threatening emergency. Learn to recognize each condition and respond promptly.

Heat Rash (Prickly Heat)

What It Is: Red, itchy bumps on the skin caused by blocked sweat glands.

Signs & Symptoms:

- Red, raised bumps on the skin (often in skin-fold areas: neck, armpits, groin)
- Itching and mild discomfort
- Usually appears after 1–2 days of continuous sweating

First Aid:

1. Move worker to a cool area.
2. Allow skin to dry.
3. Provide loose, breathable clothing.
4. Worker can usually return to duty; monitor for escalation to heat cramps or exhaustion.

Prevention: Ensure workers shower and change into dry clothing regularly during hot-weather shifts.

Heat Cramps

What It Is: Painful muscle spasms caused by dehydration and loss of electrolytes (sodium, potassium) through sweat.

Signs & Symptoms:

- Sudden, sharp muscle cramps (usually in legs, arms, or abdomen)
- Muscle twitching or spasm
- Worker is alert and sweating; core body temperature may be normal

First Aid:

1. Move worker to shade or a cool area (the ClimateRig is ideal).
2. Have worker sit or lie down and gently stretch the affected muscle.
3. Provide cool water and an electrolyte drink (sports drink with sodium and potassium).
4. Apply a cool compress to the affected muscle.
5. Worker can usually return to duty once cramps subside, but increase hydration and rest breaks.

Prevention: Ensure constant access to water (at least 1 quart per worker per hour in hot environments). Provide electrolyte drinks (not just plain water) during extended heat exposure. Enforce mandatory rest breaks every 1–2 hours in high heat. Encourage workers to report cramps early.

Time on Tool impact: Heat cramps signal a worker on the edge. If you ignore early cramps and push through, you risk escalation to heat exhaustion — which removes the worker from duty entirely and may require medical evaluation. A 10-minute break in the ClimateRig with electrolytes recovers the worker. Skipping that break can cost you the worker for the rest of the shift.

Heat Exhaustion

What It Is: A serious condition caused by dehydration and loss of electrolytes. The body is overheating, but core temperature has not yet reached the critical threshold for heat stroke.

Signs & Symptoms:

- Heavy sweating
- Weakness or fatigue
- Dizziness or lightheadedness
- Nausea or vomiting
- Pale, cool, clammy skin
- Fast, weak pulse
- Headache
- Worker is usually alert but may be confused

First Aid (Act immediately; do not return worker to duty without medical clearance):

1. Move worker **immediately** to the ClimateRig or another cool, shaded area.
2. Have worker lie down with legs elevated (to maintain blood flow to the brain).
3. Remove unnecessary clothing and apply cool water or ice packs to the neck, armpits, and groin (areas where major blood vessels are close to skin).
4. Provide cool water to drink if worker is alert and can swallow; do not force it.
5. Provide electrolyte drinks if available.
6. Call emergency services (911) if worker does not recover within 15–20 minutes of cooling, becomes confused, loses consciousness, has a seizure, or cannot drink.

Prevention: Enforce work-rest schedules, rotate workers through the ClimateRig, provide continuous hydration and monitoring, and remove workers from heat as soon as they show early signs of distress.

Time on Tool impact: A worker with heat exhaustion is off the job for the rest of the shift — minimum. If EMS is called, that worker (and the supervisor managing the response) may be unavailable for hours. The mitigation ladder described later in this chapter exists specifically to prevent this scenario.

Heat Stroke (Medical Emergency)

What It Is: Uncontrolled elevation of core body temperature (typically above 104°F / 40°C) caused by failure of the body's cooling systems. Heat stroke is **life-threatening** and can cause permanent organ damage or death.

Signs & Symptoms:

- Confusion, disorientation, or loss of consciousness
- Hot, dry skin (paradoxically, sweating may have stopped)
- Core body temperature above 104°F (40°C)
- Fast, strong pulse
- Seizures or convulsions
- Loss of consciousness

First Aid (Call 911 immediately; do not wait):

1. **Call 911 immediately. Do not delay.**
2. Move worker to a cool area (ClimateRig or shaded location) while awaiting emergency responders.
3. Apply aggressive cooling: remove all unnecessary clothing; apply ice packs or cold water to the neck, armpits, and groin; use any available cool water (hose, spray bottle, cold towels); immerse in cold water if possible.
4. Do not give the worker anything to drink; they may aspirate (choke).
5. Monitor for seizures and loss of consciousness; position worker on their side to keep airway clear.
6. Continue cooling measures until emergency responders arrive or worker's temperature normalizes.

Prevention: Heat stroke is preventable. Enforce strict work-rest schedules, continuous hydration, WBGT monitoring, mandatory breaks in the ClimateRig, and immediate removal of any worker showing signs of heat exhaustion. Do not allow workers to "push through." Heat illness escalates quickly.

Time on Tool impact: A heat stroke incident does not just remove one worker — it can shut down an entire job site. OSHA investigation, medical transport, crew disruption, and potential citations create cascading losses that dwarf the cost of any mitigation program. Prevention is not just the right thing to do; it is the only financially rational strategy.

11.3 WBGT: The Gold-Standard Heat Measurement

What Is WBGT?

Wet Bulb Globe Temperature (WBGT) is the most accurate way to measure environmental heat stress. Unlike air temperature alone, WBGT accounts for humidity, radiant heat, and wind — all the factors that affect how hot it feels to a working human body.

WBGT = (0.1 × Dry Bulb Temp) + (0.7 × Wet Bulb Temp) + (0.2 × Globe Temp)

You do not need to calculate this yourself. WBGT meters are inexpensive and readily available. More importantly, **OSHA provides a free WBGT calculator online:** https://www.osha.gov/heat-exposure/wbgt-calculator

Why WBGT Matters

Air temperature alone is misleading. For example:

- **95°F in dry desert air** (humidity 20%) = lower WBGT, manageable with hydration and rest breaks
- **95°F in humid climate** (humidity 75%) = much higher WBGT, requires more frequent and longer rest breaks and more aggressive cooling

OSHA's proposed heat standard uses WBGT thresholds to determine when employers must implement specific heat-control measures. The ClimateRig is most critical on days when WBGT exceeds 87°F.

How to Monitor WBGT

1. **Measure WBGT at the actual work site**, not in an air-conditioned office. Different work areas may have different WBGT values.
2. **Measure multiple times per shift**, because WBGT rises and falls with the sun (highest in mid-afternoon).
3. **Use an inexpensive WBGT meter** (about $100–$300 from industrial suppliers) or consult OSHA's free calculator.
4. **Use WBGT to trigger heat-control actions:** When WBGT exceeds 87°F, mandatory rest breaks and ClimateRig cooling become critical; above 92°F, restrict work to essential tasks and rotate workers frequently.

WBGT and Time on Tool

WBGT is not just a safety metric — it is the input variable that determines your work-rest ratio and, therefore, your daily productive output. As WBGT rises, unmitigated work time drops dramatically. The mitigation ladder in Section 11.5 shows exactly how each control you deploy pushes the work-rest ratio back in your favor.

11.4 Building a Heat-Illness Prevention Program

A comprehensive heat-illness prevention program has six essential elements. Each one also has a direct impact on Time on Tool.

1. Written Plan

Requirement: Under OSHA's General Duty Clause (and the proposed heat standard), your organization must have a **written heat-illness prevention plan** that:

- Identifies heat hazards specific to your operations
- Lists control measures (engineering, administrative, PPE)
- Names a heat-safety coordinator or officer
- Defines work-rest schedules based on WBGT or other heat-stress assessment
- Specifies hydration and electrolyte-drink protocols
- Describes emergency response and medical surveillance
- Establishes training requirements for supervisors and workers

How the ClimateRig fits: The ClimateRig is a key control measure in your plan. Document it as your primary cool-rest facility and describe how workers will access it during mandatory rest periods.

Time on Tool integration: Your written plan should include a section on the mitigation ladder (Section 11.5) and how each layer of mitigation improves the work-rest ratio. When you can show that deploying the ClimateRig shifts your crew from 50/50 to 75/25 or better, the plan becomes a productivity document — not just a compliance binder.

2. Water, Rest, and Shade/Cooling

Requirements:

- **Water:** Provide at least **1 quart (32 oz) of water per worker per hour** during hot-weather work.
- **Rest:** Mandatory rest breaks (at least 10 minutes) every 1–2 hours when WBGT exceeds 87°F.
- **Shade/Cooling:** Provide access to shade or cool rest areas where workers can recover during rest breaks.

How the ClimateRig fits: The ClimateRig provides active air-conditioning (32,000 BTU cooling capacity) that cools workers much faster than sitting in the shade. Position it within **200 yards** of active work areas so workers can reach it quickly during rest breaks. Ensure it is running and at a comfortable temperature (typically 70–75°F) before workers begin their shift.

Time on Tool integration: Water, shade, and fans are the base layers of the mitigation ladder. Each one is necessary, but none alone is sufficient to significantly improve work-rest ratios in moderate or high heat. It is the combination — topped by the ClimateRig's air-conditioned recovery — that unlocks the largest productivity gains. See the mitigation ladder tables in Section 11.5.

3. Acclimatization

Workers new to hot environments or returning after time off are much more vulnerable to heat illness. Gradual acclimatization improves heat tolerance and reduces risk.

Worker Status	Day 1	Day 2	Day 3	Day 4	Day 5
New worker (never worked in heat)	20% duty	40% duty	60% duty	80% duty	100% duty
Returning worker (7+ days off)	50% duty	60% duty	80% duty	100% duty	—

Table 11-1: Acclimatization

"Duty" means time on task in the hot environment. A new worker on Day 1 works 20% of their normal shift in heat, spending the rest of the time in shade/cool areas or in tasks outside the hot environment.

Acclimatization + ClimateRig:

- Use the ClimateRig as the primary cool-rest facility during the acclimatization period.
- Monitor acclimatizing workers closely; they are at higher risk.
- If a worker shows signs of heat exhaustion or persistent cramps during acclimatization, slow the ramp-up and provide more frequent ClimateRig breaks.

Time on Tool integration: Acclimatization is an investment with a clear payoff. An unacclimatized worker operating at 20% duty contributes very little productive time. But by Day 5, that same worker is at 100% — and with the full mitigation ladder in place, maintaining a 75/25 or better work-rest ratio. The short-term Time on Tool cost of acclimatization prevents the much larger cost of a heat-illness incident.

4. Work-Rest Schedules

Mandatory rest breaks are essential. OSHA's proposed standard requires work-rest schedules based on WBGT. Here is a simple guideline:

WBGT Range	Work / Rest (Light Work)	Work / Rest (Moderate Work)	Work / Rest (Heavy Work)	ClimateRig Cooling
Below 82°F	Continuous work	Continuous work	50 / 10 each hour	Recommended
82°F – 87°F	Continuous work	50 / 10 each hour	40 / 20 each hour	Recommended
87°F – 90°F	50 / 10 each hour	40 / 20 each hour	30 / 30 each hour	Required
90°F – 92°F	40 / 20 each hour	30 / 30 each hour	20 / 40 each hour	Required
Above 92°F	30 / 30 each hour	20 / 40 each hour	10 / 50 each hour	Required; restrict to

Table 11-2: Work-Rest

Implementation:

1. Set a visible timer or alarm that signals rest-break time.
2. Rotate workers through the ClimateRig in groups (the ClimateRig capacity is 18 workers; if your crew is larger, rotate).
3. Ensure a supervisor tracks time in the hot zone and enforces rest-break discipline.
4. Document work-rest compliance in a log (see Appendix D).

Time on Tool integration: This table shows the *unmitigated* work-rest schedule — what you are stuck with if you have no cooling beyond shade. The mitigation ladder in Section 11.5 shows how stacking controls (water + shade + fans + cooling PPE + ClimateRig) can shift these ratios dramatically. A crew that would otherwise work only 30 minutes per hour at WBGT 90°F can work 45 minutes or more per hour with the full mitigation ladder in place.

5. Monitoring and Early Detection

Assign a **heat-safety officer** or supervisor to watch for early signs of heat illness throughout the shift.

Watch for: Unusual fatigue or sluggish behavior; excessive sweating or, paradoxically, lack of sweating; complaints of headache, nausea, or dizziness; disorientation or confusion; pale, clammy skin; heat cramps.

Respond immediately: If you observe any sign of heat illness, move the worker to the ClimateRig or another cool area **right away.** Have the worker rest and drink water/electrolyte beverage. Monitor the worker for 15–20 minutes. If symptoms don't improve, do not return worker to duty; consider calling emergency services.

Time on Tool integration: Early detection is the cheapest intervention. A worker caught at the "cramps" stage recovers in 10 minutes in the ClimateRig and returns to work. A worker who progresses to heat exhaustion is off the job for the rest of the shift — or longer. Monitoring costs nothing but attention; the return is measured in workers kept productive.

6. Training

Every supervisor, worker, and first-aider must understand heat illness. Your heat-illness prevention plan must include **annual training** covering:

- Recognition of heat rash, heat cramps, heat exhaustion, and heat stroke
- First aid response for each condition
- How to use WBGT data to adjust work-rest schedules
- The importance of hydration and electrolyte drinks
- How to use the ClimateRig safely and effectively
- Acclimatization protocols
- When to call emergency services
- **The mitigation ladder and Time on Tool concept** — so workers and supervisors understand *why* each control matters and how their compliance directly affects crew productivity

11.5 The Mitigation Ladder: How Each Control Improves Work-Rest Ratios

This is the central framework of this chapter. Heat stress mitigation is cumulative. Each control you add improves the work-rest ratio your crew can safely maintain. The tables below show how work-rest schedules shift as you stack mitigations, based on the tiered evaluation model used by major industrial operators for field personnel in high-heat environments.

How It Works

Think of mitigations as layers. Each layer reduces heat stress on the worker, which allows them to work longer before a mandatory rest break. The ClimateRig is the top layer — the one that delivers the largest single improvement.

Priority	Mitigation	What It Does
1 (Baseline)	**Drinking water at the job site**	Prevents dehydration. Necessary but does not reduce environmental heat load.
2	**Shade or shelter nearby**	Reduces radiant heat. Workers rest in shade between work cycles.
3	**Air movement (fans / air movers)**	Increases evaporative cooling. Most effective in low-humidity environments.
4	**Cooling PPE (vests, neck wraps, vortex coolers)**	Directly lowers body temperature through contact cooling.
5 (Maximum)	**ClimateRig T25 air-conditioned cool-down trailer**	Provides true 73°F climate-controlled recovery. Workers cool down fast, return to work faster, and maintain higher ratios all day. Serves up to 18 workers simultaneously.

Table 11-3: Mitigation

Moderate Heat (Heat Index 91°F – 102°F) — Moderate Workload

Mitigations in Place	Work / Rest Ratio	Minutes Work per Hour	Minutes Rest per Hour
No mitigations	50 / 50	30	30
+ Water nearby + Shade nearby	50 / 50	30	30
+ Fans / air movers	75 / 25	45	15
+ Water at job site + Cooling PPE	75 / 25	45	15
+ ClimateRig T25 cool-down trailer	**100 / 0**	**60**	**0***

Table 11-4: Moderate/Moderate

High Heat (Heat Index 103°F – 114°F) — Moderate Workload

Mitigations in Place	Work / Rest Ratio	Minutes Work per Hour	Minutes Rest per Hour
No mitigations	25 / 75	15	45
+ Water nearby + Shade nearby	25 / 75	15	45
+ Fans / air movers	50 / 50	30	30
+ Water at job site + Cooling PPE	50 / 50	30	30
+ ClimateRig T25 cool-down trailer	**75 / 25**	**45**	**15**

Table 11-5: High/Moderate

Extreme Heat (Heat Index 115°F+) — Moderate Workload

Mitigations in Place	Work / Rest Ratio	Minutes Work per Hour	Minutes Rest per Hour
No mitigations	0 / 100	0 (work stoppage)	60
+ Water nearby + Shade nearby	25 / 75	15	45
+ Fans / air movers	25 / 75	15	45
+ Water at job site + Cooling PPE	50 / 50	30	30
+ ClimateRig T25 cool-down trailer	**50 / 50**	**30**	**30**

Table 11-6: Extreme/Moderate

NOTICE: These schedules are guidelines based on industrial heat stress mitigation best practices. Actual work-rest ratios must be determined by a qualified safety professional based on site-specific conditions, acclimatization status of workers, and applicable regulations. Always monitor workers for signs of heat illness regardless of scheduled ratios.

**Workers still take normal breaks and hydration pauses. "100/0" means no mandatory heat-stress rest period is required beyond standard breaks when an air-conditioned recovery station is available at the site.*

11.6 Time on Tool: Calculating the Productivity Return

The financial impact of improved work-rest ratios compounds quickly across a crew and across a project.

The Basic Formula

Recovered Minutes per Worker per Hour = Mitigated Work Minutes – Unmitigated Work Minutes

Recovered Hours per Crew per Day = (Recovered Minutes × Workers × Work Hours) ÷ 60

Example: 12-Worker Crew, 10-Hour Shift, Moderate Heat (91°F – 102°F)

Scenario	Work per Hour	Rest per Hour	Productive Hrs/Worker/Shift	Total Crew Productive Hrs
No mitigations (50/50)	30 min	30 min	5.0 hrs	60.0 hrs
With ClimateRig + full mitigations (75/25)	45 min	15 min	7.5 hrs	90.0 hrs
Time recovered			**+2.5 hrs/worker**	**+30.0 hrs/crew**

Table 11-7: 12-Worker Crew

That is **30 additional productive hours per day** for a 12-person crew — the equivalent of nearly 4 extra workers on the job.

Example: 18-Worker Crew, 10-Hour Shift, High Heat (103°F – 114°F)

Scenario	Work per Hour	Rest per Hour	Productive Hrs/ Worker/Shift	Total Crew Productive Hrs
No mitigations (25/75)	15 min	45 min	2.5 hrs	45.0 hrs
With ClimateRig + full mitigations (75/25)	45 min	15 min	7.5 hrs	135.0 hrs
Time recovered			**+5.0 hrs/worker**	**+90.0 hrs/crew**

Table 11-8: 18-Worker Crew

At high heat conditions, the ClimateRig recovers **90 productive crew-hours per day** — more than doubling the work output compared to an unmitigated site.

Projecting the Dollar Value

To estimate the financial return, multiply recovered crew-hours by your blended labor rate.

Heat Condition	Crew Size	Daily Hrs Recovered	Blended Rate*	Daily Value	Weekly (5-Day)	Monthly (22-Day)
Moderate (91–102°F)	12	30.0 hrs	$55/hr	$1,650	$8,250	$36,300
Moderate (91–102°F)	18	45.0 hrs	$55/hr	$2,475	$12,375	$54,450
High (103–114°F)	12	60.0 hrs	$55/hr	$3,300	$16,500	$72,600
High (103–114°F)	18	90.0 hrs	$55/hr	$4,950	$24,750	$108,900

Table 11-9: Dollar Value

**$55/hr is a conservative blended labor rate for industrial/construction craft labor including burden. Adjust to your actual rates.*

Key Insight: During a typical 4-week summer turnaround with an 18-person crew working in High Heat conditions, the ClimateRig can recover an estimated **$99,000 or more** in productive labor value — many times the cost of deploying the trailer.

At Scale: Turnaround and Project Planning

Major industrial operators in Texas have documented the impact of heat stress mitigation on turnaround productivity. When mitigations shift the work-rest ratio from 50/50 to 75/25, each worker gains **15 additional productive minutes per hour.** Across a multi-week turnaround with dozens of craft workers, this adds up to thousands of recovered hours.

Project Duration	Avg. Daily Crew	Hrs Recovered/Day	Total Hrs Recovered	Estimated Labor Value at $55/hr
2-week turnaround	18 workers	45.0 hrs	450 hrs	$24,750
4-week turnaround	18 workers	45.0 hrs	990 hrs	$54,450
3-month summer season	12 workers	30.0 hrs	1,980 hrs	$108,900
3-month summer season	18 workers	45.0 hrs	2,970 hrs	$163,350

Table 11-10: Turnaround

These figures assume Moderate Heat conditions (91°F–102°F). At High Heat conditions (103°F–114°F), the recovered hours — and their dollar value — approximately double.

11.7 Industry-Specific Best Practices

The mitigation ladder and Time on Tool principles apply universally, but each industry has unique heat hazards. The following sections adapt the framework to your operating environment.

11.7.1 Construction & Heavy Civil

Construction is the **highest-risk industry for heat illness** — approximately 40% of occupational heat-related deaths occur in construction. Reasons include direct sun exposure, heavy protective equipment, intense physical exertion, hot materials, and time pressure that discourages breaks.

Unique Heat Hazards: Direct solar radiation (rooftop, concrete, exterior framing); hot materials (sun-baked steel, concrete, asphalt); heavy PPE (hard hats, vests, respirators); high exertion (heavy lifting, climbing); time pressure and piece-rate pay; elevated work with reduced air movement; limited natural shade.

Best Practices:

1. **Pre-Shift Planning:** Position the ClimateRig at the job site *before workers arrive*, ideally within 200 yards of active work areas. Test it to ensure it reaches 72–74°F. Brief all workers on heat hazards, work-rest schedules, the mitigation ladder, and ClimateRig location.
2. **Schedule Adjustments:** Schedule heavy labor (framing, excavation, concrete) for early morning or late afternoon. Avoid scheduled work during the hottest hours (11:00 AM–3:00 PM). Build mandatory ClimateRig rest breaks into the daily schedule.
3. **Mandatory Cool-Down Breaks:** When WBGT exceeds 87°F, every worker must take at least a 10–15 minute break in the ClimateRig every 2 hours. Rotate crews so no more than 18 workers at a time. A supervisor monitors break timing and compliance.
4. **Supplement with Field Controls:** Deploy shade structures, spray fans, and water coolers at individual work stations in addition to the ClimateRig. Each layer improves the ratio.
5. **Acclimatization:** New workers follow the 5-day ramp-up; returning workers follow the 4-day return schedule. Do not assign new workers to high-exertion tasks during acclimatization.
6. **Compliance Documentation:** Log WBGT readings and work-rest schedule changes daily (see Appendix D). Track which workers used the ClimateRig and for how long. Document any heat-illness incidents.

Time on Tool impact for construction: A 12-person framing crew working in 95°F heat at 50/50 produces only 60 productive hours in a 10-hour shift. Deploy the full mitigation ladder with the ClimateRig and that crew produces 90 hours — a 50% increase. Over a 2-week phase, that is 300 recovered hours of framing labor.

11.7.2 Oil & Gas Operations

Oil and gas worksites present unique heat challenges: remote locations, heavy flame-resistant (FR) clothing, prolonged 12+ hour shifts, hot equipment and piping, and limited infrastructure. FR gear adds 10–15°F to perceived body temperature.

Unique Heat Hazards: Flame-resistant clothing that blocks evaporative cooling; hot equipment and piping; remote locations with limited facilities; 12-hour shifts that compound heat stress; high exertion during rig operations and well servicing.

Best Practices:

1. **Site Positioning:** Position the ClimateRig near the wellhead or active operations area — not in a distant yard. Use a diesel-powered generator if shore power is unavailable. Establish the ClimateRig as the designated rest facility.
2. **Rotation and Monitoring:** Rotate workers through the ClimateRig on 2-hour cycles: 2 hours of work, 15–20 minutes of cool-down. Monitor FR-clothed workers more frequently. Assign a dedicated heat-safety officer during peak-heat periods.
3. **Acclimatization:** Ensure new workers are properly acclimatized before assigning them to hot-zone work. Use the ClimateRig extensively during acclimatization.
4. **Hydration Protocol:** Provide cold water at multiple locations. Provide electrolyte drinks during 2-hour work cycles. Enforce hydration discipline — dehydration is common at remote sites.
5. **C1D2 Hazardous-Area Configuration:** If your wellhead is in a Class I Division 2 (C1D2) hazardous area, the ClimateRig is available in a UL-listed C1D2 configuration with certified A/C unit and electrical system. Contact ATS Shield-Safe for availability.
6. **Shift Documentation:** Log WBGT readings, track worker rotation through the ClimateRig, and document any heat-illness symptoms.

Time on Tool impact for oil & gas: During a summer turnaround, an 18-person craft crew in FR clothing at a Texas refinery can lose 90 crew-hours per day to mandatory heat breaks without mitigation. The ClimateRig with the full mitigation ladder recovers the majority of those hours. Over an 11-turnaround season, industrial operators have documented **9,240 recovered hours** — worth over **$500,000** at standard craft labor rates.

11.7.3 Utilities & Power Infrastructure

Utilities work includes overhead line maintenance, pole-top work, underground cable placement, transformer installation, and substation operations. Workers are often in direct sun wearing insulating PPE and doing physically demanding work at heights.

Unique Heat Hazards: Direct sun exposure at pole-top; rubber gloves and sleeves limiting cooling; radiant heat from hot surfaces; height limitations preventing easy breaks; traffic safety constraints.

Best Practices:

1. **Site Setup:** Stage the ClimateRig before crews arrive. Position it 100–200 yards from active work zones.
2. **Pre- and Post-Work Thermal Conditioning:** Use the ClimateRig for pre-shift cooling (10–15 minutes before starting work) and post-shift cooling (15–20 minutes to lower core temperature before driving home).
3. **Work Cycles:** Enforce 90-minute maximum work cycles in extreme heat (WBGT > 92°F), then 20-minute ClimateRig rest. For moderate heat, 2-hour work cycles with 15-minute breaks.
4. **Traffic Safety Coordination:** Coordinate with traffic control to ensure workers can safely access the ClimateRig during breaks.

Time on Tool impact for utilities: Line crews working at pole-top in direct sun face severe heat exposure. Pre-shift and post-shift ClimateRig cooling extends the effective work window and reduces fatigue-related errors.

11.7.4 Emergency Services & Fire Rehabilitation

Fire services and rescue operations expose personnel to extreme heat, heavy exertion, and physiological stress. NFPA 1584 mandates rehabilitation areas with cooling and monitoring.

Unique Heat Hazards: Turnout gear adds 10–15°F to perceived body temperature; extreme exertion; no acclimatization time for emergency calls; post-incident fatigue.

Best Practices (NFPA 1584 Compliance):

1. **Designated Rehab Area:** The ClimateRig serves as the climate-controlled rehabilitation zone.
2. **Rest Duration:** Support the mandated 10-minute minimum rest period.
3. **Active Cooling:** A/C lowers core body temperature much faster than passive rest in shade.
4. **Vital-Signs Monitoring:** The quiet, controlled ClimateRig environment allows paramedics to assess vital signs.
5. **Hydration and Electrolytes:** Stock the ClimateRig with cold water and electrolyte drinks.
6. **Deployment Protocol:** Position the ClimateRig at the incident command post before personnel are assigned. Ensure it is cold and ready (72–74°F). Assign a Rehabilitation Officer to manage intake and exit.
7. **Exit Criteria:** Workers must show normal vital signs, stable mental status, and adequate hydration before returning to duty.

Time on Tool impact for emergency services: In a multi-alarm incident, effective rehabilitation means faster personnel turnover — getting firefighters back on line sooner and with lower risk. The ClimateRig's active cooling (not just shade) accelerates recovery so personnel can safely return to duty faster.

11.7.5 Mining & Extraction

Mining operations expose workers to extreme heat from underground geothermal sources, surface solar exposure, dust, and heavy equipment vibration.

Unique Heat Hazards: Underground geothermal heat; dust restricting evaporative cooling; extremely labor-intensive tasks; continuous around-the-clock operations; limited fresh air.

Best Practices:

1. **Site Positioning:** Position the ClimateRig at the mine portal or pit rim. Use it as a shift-change cooling station (15–20 minutes between shifts).
2. **Ventilation:** Clean the ClimateRig interior daily; vacuum dust from vents weekly.
3. **Hygiene:** Provide a mat or step at the entrance to reduce dust tracking. Ensure workers can clean hands and face before entering.
4. **Rotation:** Rotate workers through the ClimateRig on a scheduled basis (e.g., every 4 hours if in underground heat all day).

11.7.6 Manufacturing & Industrial Facilities

Manufacturing environments generate process heat from furnaces, boilers, forges, welding, and steam systems, often with poor ventilation and heavy PPE requirements.

Unique Heat Hazards: Process heat from equipment; poor indoor ventilation; heavy PPE; production schedule pressure; worker isolation at specific stations.

Best Practices:

1. **Facility Positioning:** Install the ClimateRig outside the facility near the highest-heat work areas. Supplement with portable fans and air movers inside.
2. **Indoor WBGT Monitoring:** Deploy WBGT sensors inside the facility. Post readings in break rooms and work areas.
3. **Production-Integrated Schedules:** Embed heat-protection breaks into production scheduling so they do not halt operations. Stagger breaks to keep equipment running.
4. **Trend Analysis:** Log heat-illness symptoms, ClimateRig usage, and work-rest compliance. If one zone has more incidents, increase cooling or rest breaks in that zone.

11.8 Suggested ClimateRig Mitigation Program

To maximize Time on Tool, deploy the ClimateRig as part of a layered mitigation program. The following five-step implementation works across all industries.

Step 1: Assess Conditions Daily

Before each shift, evaluate the heat stress potential using five factors:

1. **Heat index forecast** — Check the expected heat index for the work period.
2. **Workload intensity** — Classify tasks as Light, Moderate, or Heavy.
3. **PPE requirements** — Note whether non-breathable or impermeable PPE is required.
4. **Radiant heat sources** — Identify hot surfaces, furnaces, or process equipment near the work area.
5. **Work duration** — Determine total expected time in the heat-affected environment.

Step 2: Apply the Mitigation Ladder

Stack mitigations from the bottom up. Each layer improves the allowable work-rest ratio:

Step 3: Set the Work-Rest Schedule

Using the mitigation ladder tables in Section 11.5, determine the appropriate work-rest ratio based on: (a) the current heat index level, (b) the workload classification, and (c) the mitigations you have in place.

Post the schedule visibly at the job site. Assign a supervisor or safety lead to enforce it.

Priority	Mitigation	Action
1 (Baseline)	**Drinking water at the job site**	Position water coolers within the immediate work area — not at a remote break tent.
2	**Shade or shelter nearby**	Erect canopy tents, use building shade, or position the ClimateRig within short walking distance.
3	**Air movement**	Deploy fans or portable air movers at the work face where possible.
4	**Cooling PPE**	Issue cooling vests, neck wraps, or vortex coolers to workers in heavy-exertion or impermeable-PPE tasks.
5 (Maximum)	**ClimateRig T25 cool-down trailer**	Position the T25 as the designated cool-down and recovery station. Workers rotate through the 73°F climate-controlled interior during rest periods.

Table 11-11: Mitigation Work-Rest

Step 4: Rotate Crews Through the ClimateRig

6. Set a timer or alarm that signals each rest break.
7. Rotate workers through the ClimateRig in groups. If your crew exceeds 18, stagger groups.
8. Workers entering the ClimateRig should remove impermeable outer clothing to accelerate cool-down.
9. Provide water and electrolyte drinks inside the ClimateRig.
10. Workers should remain in the air-conditioned space for the full duration of the rest period before returning to the work zone.

Step 5: Document and Track

11. Record the heat index, work-rest schedule, and mitigations in place at the start of each shift.
12. Log actual rest-break compliance (see Appendix D: Maintenance Log Templates).
13. Note any heat illness symptoms observed and actions taken.
14. Retain records for the duration required by your company policy and applicable regulations.

11.9 General Heat-Safety Checklist

Use this universal checklist to evaluate your heat-illness prevention program. All items should be completed before hot-weather operations begin.

Pre-Season Preparation (Spring/Early Summer)

- ☐ **Written Plan:** Completed and distributed to all supervisors and safety officers
- ☐ **WBGT Equipment:** Purchased WBGT meter or arranged access to OSHA calculator
- ☐ **ClimateRig Deployment:** Confirmed location, positioning, and power source (generator or shore power)
- ☐ **ClimateRig Testing:** Tested A/C operation; confirmed it reaches 70–75°F
- ☐ **Acclimatization Schedule:** Defined new-worker and returning-worker protocols
- ☐ **Work-Rest Schedule:** Defined work-rest cycles for each WBGT threshold
- ☐ **Mitigation Ladder:** Procured all supplies (shade structures, fans, cooling PPE, water coolers, electrolyte drinks)
- ☐ **Water/Electrolytes:** Positioned at work areas and near the ClimateRig
- ☐ **Emergency Response:** Identified nearest hospital; briefed all supervisors on heat-illness first aid and 911 procedures
- ☐ **Training:** Completed all-hands training on heat-illness recognition, first aid, ClimateRig use, and the mitigation ladder / Time on Tool concept
- ☐ **Documentation:** Created templates for WBGT logs, ClimateRig usage logs, incident reports, and acclimatization records

Daily Operations (Hot-Weather Period)

- ☐ **Morning WBGT Check:** Measured at the job site before workers arrive
- ☐ **ClimateRig Ready:** Confirmed cold and operating before workers begin work
- ☐ **Water Coolers Full:** Refilled; electrolyte drinks stocked
- ☐ **Toolbox Talk:** Conducted brief pre-shift meeting covering heat hazards, today's work-rest schedule, and ClimateRig location
- ☐ **Supervisor Assigned:** Heat-safety officer designated to monitor signs of heat illness and enforce rest breaks
- ☐ **Timing Enforcement:** Alarms or timers set; ClimateRig usage tracked
- ☐ **Worker Monitoring:** Watching for fatigue, confusion, or other heat-illness signs
- ☐ **Incident Documentation:** Any symptoms, first aid, and worker status recorded
- ☐ **Evening Breakdown:** ClimateRig shut down; water coolers cleaned

Weekly Review (During Hot Season)

- ☐ **WBGT Trends:** Reviewed daily readings; identified patterns
- ☐ **ClimateRig Usage:** Reviewed entry/exit logs; confirmed workers using ClimateRig per schedule
- ☐ **Time on Tool Tracking:** Calculated recovered productive hours for the week
- ☐ **Incidents:** Reviewed any heat-illness reports; identified trends or problem zones
- ☐ **Equipment Check:** Inspected ClimateRig for damage, cleanliness, or operation issues
- ☐ **Supervisor Feedback:** Discussed worker compliance, heat-illness concerns, schedule adjustments
- ☐ **Adjustments:** If data suggests issues, adjusted schedules, relocated ClimateRig, or deployed additional resources

Post-Season Review (Fall/Winter Cooldown)

- ☐ **Incident Summary:** Compiled all heat-illness incidents; identified trends
- ☐ **Time on Tool Summary:** Calculated total recovered hours and dollar value for the season
- ☐ **Program Effectiveness:** Evaluated whether program prevented serious heat illness; identified improvements
- ☐ **Equipment Servicing:** Had ClimateRig A/C and electrical systems serviced
- ☐ **Winterization:** Prepared ClimateRig for cold-weather storage (see Chapter 6)
- ☐ **Training Updates:** Updated training for next season based on lessons learned
- ☐ **Documentation Archive:** Filed all reports, logs, and records for regulatory inspection or litigation defense

11.10 Quick-Reference: ClimateRig Time-on-Tool Recovery

For quick field reference, use this summary card:

If Heat Index Is…	Without ClimateRig (Typical)	With ClimateRig + Mitigations	Time Recovered per Worker per Hour
91°F – 102°F (Moderate)	30 min work / 30 min rest	45–60 min work / 0–15 min rest	**+15 to +30 min**
103°F – 114°F (High)	15 min work / 45 min rest	45 min work / 15 min rest	**+30 min**
115°F + (Extreme)	0 min work (stoppage)	30 min work / 30 min rest	**+30 min**

Table 11-12: Summary Card

Assumes moderate workload. Heavy workload may require more conservative ratios. Always defer to your qualified safety professional.

11.11 Summary

Heat illness is 100% preventable — and prevention pays for itself. The combination of engineering controls (the ClimateRig), administrative controls (work-rest schedules, WBGT monitoring), personal protective practices (hydration, acclimatization), and medical oversight (training, monitoring, first aid) eliminates the conditions that lead to heat illness while simultaneously maximizing your crew's productive Time on Tool.

The ClimateRig is both a safety asset and a productivity multiplier. In moderate summer heat, a single ClimateRig can recover 30+ crew-hours per day. In high heat, that number can exceed 90 crew-hours. Over a turnaround or a full summer season, the recovered labor value can reach six figures — dwarfing the cost of the trailer itself.

Deploy it. Use it. Track the results. Your crews will be safer, and your project will stay on schedule.

If workers are showing signs of heat illness, your program is already failing. Prevent heat illness by being proactive: start cool-rest breaks before workers are in distress, enforce hydration before anyone is thirsty, and rotate workers through the ClimateRig on a schedule — not by crisis.

For more information on heat illness, OSHA guidelines, and WBGT monitoring, see:

- **OSHA Heat Illness Prevention:** https://www.osha.gov/heat-exposure
- **OSHA WBGT Calculator:** https://www.osha.gov/heat-exposure/wbgt-calculator
- **NFPA 1584 (Fire Service):** National Fire Protection Association
- **Cal/OSHA Heat Illness Prevention Standard:** https://www.dir.ca.gov/dosh/heat-illness-prevention-standard.html

Appendices

APPENDIX NAVIGATION:

- **Appendix A** → Complete specifications reference
- **Appendix B** → Electrical wiring diagram reference
- **Appendix C** → User-serviceable parts and part numbers
- **Appendix D** → Maintenance and inspection log templates
- **Appendix E** → Technical terminology glossary
- **Appendix F** → Contact and regulatory resource information

APPENDIX A: COMPLETE SPECIFICATIONS TABLE

Physical Specifications

Specification	Value	Notes
Product Name	ClimateRig T25 Cool-Down Trailer	Manufactured by ATS ShieldSafe
Model	T25	Denotes 7' × 21' exterior footprint
Exterior Length	21 feet (6.4 m)	Standard container length
Exterior Width	7 feet (2.1 m)	Standard container width
Interior Footprint	128 square feet (11.9 m^2)	Climate-controlled space
Interior Height	~7–8 feet (~2.1–2.4 m)	Estimated; see technical drawings
Dry Weight	~2,500 lbs (1,134 kg)	Empty trailer, no payload
Worker Capacity	18 workers	Maximum occupancy; not occupancy limit for emergency exit
VIN Plate Location	Street side, near front bottom	Vehicle Identification Number for registration

Table A-1: Physical Specs

Base Trailer (CellTech)

Specification	Value	Notes
Base Trailer Manufacturer	CellTech Metals, Elm Mott, TX	Supplies 7' × 21' enclosed trailer
Frame Material	Hot-dip galvanized steel (80 ksi)	All-steel construction; no wood
Frame Design	4" double-tube main rail + 16" OC cross-members	Standard commercial-grade construction
Wall Construction	Patented CellTech™ panel technology	All-steel skins with structural adhesive core
Finish	Hot-dip galvanized; dimpled-face exterior	Aerodynamic golf-ball dimple pattern; flat interior
Thermal Benefit	Interior ~20°F cooler than conventional	Due to bi-directional metalcore airflow panel structure
Roof Design	Dimpled-face aerodynamic; max load <350 lbs (single-person maintenance access only)	Standard 14.25" × 14.25" A/C opening
Door Type	Rear hinged double doors with step	Emergency exit door (front-facing) also provided
Emergency Exit	Front-facing emergency exit door	Rapid evacuation access
Windows	6 × polycarbonate windows	For interior visibility and natural light
E-Tracks	Integrated vertical E-tracks	For cargo/equipment securing (interior)
Panel Assembly	Screwless panel design	Tool-free inspection and maintenance
Tire Replacement Interval	5 years from DOT manufacture date	Replace regardless of tread condition

Table A-2: Base Trailer

Warranty Coverage (CellTech Components)

Component	Coverage Period	Key Details
CellTech Panels	10 years	Material, workmanship, delamination coverage
Galvanized Frame	10 years	From ship date; excludes corrosive environment damage
Dexter Axles	5 years	Manufacturer warranty from Dexter
Paint (Pro-Rata)	5 years	Cost-sharing between ATS ShieldSafe and customer

Table A-3: CellTech Warrenty

Climate Control System

Specification	Value	Notes
A/C Manufacturer	Fogatti, Inc.	Model: RB160A1W (InstaCool Ultra)
Quantity of A/C Units	2 units	Dual system for redundancy and capacity
Total Cooling Capacity	32,000 BTU	16,000 BTU per unit × 2
Total Heating Capacity	25,000 BTU	12,500 BTU per unit × 2
Optional Auxiliary Heater	2,000 watts	Forced-air heater for cold-weather operation
Refrigerant Type	R32 (low-GWP)	High-efficiency, environmentally friendly
Airflow (Per Unit)	418 CFM	Cubic feet per minute; dual-motor, triple-fan design
Total Airflow (Dual)	~836 CFM	Combined capacity from both units
Energy Efficiency Ratio (EER)	11.8	Measured performance rating
Noise Level	43 dB	Ultra-quiet operation
Cooling Speed	~4 minutes	Time to feel temperature change (manufacturer claim)
Mounting	Rooftop (non-ducted)	No ductwork required
Roof Opening	14.25" × 14.25"	Standard CellTech opening; fits both units
Unit Height	12.2" (low-profile)	Rooftop-mounted units
Control Methods	Per-unit control panel, wireless remote, WiFi app (Fogatti)	Multi-method temperature and mode control
Auto-Oscillation	0–85° swing angle	Horizontal air distribution; worker comfort
Operating Modes	Cooling, heating, auto-mode	Seasonal flexibility
Manual Disconnect	All-pole 3mm contact separation	Electrical safety shut-off

Table A-4: Climate System

Axles & Suspension

Specification	Value	Notes
Axle Manufacturer	Dexter	Standard commercial trailer manufacturer
Axle Type	Tandem (2)	Dual independent axles
Axle Rating (Each)	3,500 lbs (1,588 kg)	Per axle capacity
Total GAWR	7,000 lbs (3,175 kg)	Gross Axle Weight Rating (both axles combined)
Brakes	Electric brakes on both axles	Synchronized with tow vehicle controller
Suspension	Dexter standard	Commercial-grade; DOT-approved

Table A-5 :Axles/Suspension

Towing & Transportation

Specification	Value	Notes
Towable Rating	Half-ton (light-duty) truck	Standard pickup trucks (F-150, Silverado 1500, etc.)
Hitch Type	2-5/16" ball coupler	Standard North American hitch
Coupler Style	5-Position adjustable channel (weld-on)	Swappable for other hitch types if needed
Coupler Rating	15,000 lbs	Exceeds ClimateRig requirements
Tongue Weight (Est.)	250–375 lbs (113–170 kg)	10–15% of dry weight
Lighting Connector	7-pin standard	Brake signal + standard lighting
DOT Compliance	Yes	Meets Department of Transportation requirements
Braking System	Electric brakes on both axles	Integrated with tow vehicle brake controller
Safety Chains	Required	Redundant towing safety backup
Breakaway Switch	Standard (all units)	Activates trailer brakes if separated from tow vehicle
Lighting	LED rear lights + reflectors	Standard trailer safety lighting

Table A-6 :Towing/Transportation

Electrical System

Specification	Value	Notes
Main Power Inlet	L14-30P (NEMA 14-30)	Twist-lock, weather-sealed inlet; curb side, near rear
Inlet Rating	30A, 125/250V, single-phase	Standard industrial generator/shore power
Panel Location	Front wall (interior), opposite emergency exit	Accessible from inside trailer
Inlet Cable (Included)	L14-30 extension cord, 20 feet, 12 AWG	Southwire part #65172840
Main Panel	Square-D QO series (100A capacity)	Model QON612L100; front wall mounted (no main breaker)
Main Service	120/240V AC, single-phase	Dual-voltage distribution; breaker protection at shore power source or generator
A/C Unit #1 Breaker	20A, 12 AWG (red wire)	Fogatti InstaCool Ultra #1
A/C Unit #2 Breaker	20A, 12 AWG (white wire)	Fogatti InstaCool Ultra #2
Lights/Accessory Breaker	15A, 14 AWG wire	Interior LED fixtures + rooftop porch light
AC Outlets Breaker (optional)	15A GFCI, 14 AWG wire	NEMA 5-15R outlets (8 total); optional Power Bank add-on
USB Charger Breaker (optional)	15A, 12V DC power supply	12V multi-port USB charging stations (2 units); optional Power Bank add-on
AC Receptacles (optional)	NEMA 5-15R (8 total)	120V, 15A rated; optional Power Bank connected via MOLEX
USB Charging Stations (optional)	2 × 12V multi-port chargers	Multiple USB ports; powered through 12V DC power supply; optional Power Bank
DC Power Supply	Phoenix Contact PS-EE-2G/1AC/12D-C/240W	120V AC input → 12V DC output (20A capacity)
Ground Bar	7-terminal ground bar (Square-D QO)	All metal enclosures bonded to ground per NEC
Ground Wire	10 AWG green stranded copper	2 pieces, 25 feet each; main ground distribution

Table A-7: Electrical

Wiring Standards & Connectors

Specification	Value	Notes
L14-30 Inlet Wiring	10 AWG THHN (red, white, black, green)	Primary power connection wires
A/C Unit Wiring	12 AWG THHN/THWN-2 (red, white, black, green)	A/C distribution to breaker panel
Light & Outlet Wiring	14 AWG THHN/THWN-2 (red, white, black, green)	Interior lighting and AC outlet circuits
Low-Voltage (12V DC) Wiring	16 AWG TFFN (brown, red, black)	USB chargers, light controls, auxiliary power
Conduit & Protection	Self-wrap 1/2" black conduit	Strain relief and wire protection
Wire Splices	WAGO lever-nut connectors (2/3-conductor)	Quick-connect for reliable joints
Panel Connectors	Molex MEGA-FIT pre-tinned connectors	Sizes: 10 AWG, 12 AWG, 14/16 AWG
Ring Terminals	Yellow vinyl-insulated (various sizes)	Connections to A/C units and ground bar

Table A-8: Standards/Connectors

Interior Features

Specification	Value	Notes
Seating	2 full-length benches	600 lbs capacity each; side-mounted for worker rest
Flooring	Steel with optional coating	CellTech base trailer standard
Wall Finish	All-steel panels (interior smooth)	Dimpled exterior; easy-to-clean interior
Main Interior Lighting	4 × 9" rectangular LED dome fixtures	480 lumen each; white light; interior-mounted
Porch/Step Light	1 × 5" LED dome light	630 lumen; rooftop step area illumination
Temperature Display	Per-unit control panel (on each A/C unit)	Shows current temperature and set-point
Ventilation	Active A/C circulation + passive airflow	Non-ducted Fogatti design; open-air distribution
Doors	Rear hinged double doors + emergency exit	Manual lever/push-to-open latches
Door Access	Manual step on rear door	Safe ingress/egress for workers

Table A-9: Int. Features

Climate Control & Efficiency

Specification	Value	Notes
Climate Technology	Non-evaporative air conditioning	Works in high-humidity climates (unlike swamp coolers)
Temperature Control Range	Varies by outdoor conditions	Heating and cooling modes; per-unit control panel set-point control
WBGT Integration	Website provides WBGT guidance	Tool for heat-stress management compliance
Interior Temperature Benefit	~20°F cooler than conventional trailers	Due to CellTech panel design
Redundancy	Dual A/C units	Continued operation if one unit fails
Seasonal Use	Year-round capable	With optional 2 kW heater for winter

Table A-10: Control and Efficiency

Compliance & Certifications

Specification	Value	Notes
OSHA Alignment	Proposed Heat Illness & Injury Prevention Standard	Aids compliance with federal heat-stress guidelines
NFPA 1584	Potential alignment with fire service protocols	Suitable for emergency-services heat-illness response
DOT Compliance	Meets towing and safety requirements	Dexter axles; standard lighting and signals
Cal/OSHA (California)	Meets California Heat Illness Prevention Standard (8 CCR 3395)	Non-evaporative cooling; adequate during high heat stress
NEC Compliance	All wiring per National Electrical Code	R32 appliances comply with UL/CSA standards
EPA SNAP Approval	R32 refrigerant approved	Lower-GWP (~675 vs. ~2,088 for R410A)
Patented Design	17 patents	Design portfolio protection

Table A-11: Compliance

Warranty Summary

Item	Coverage	Duration	Notes
Panels & Frame	Material, workmanship, delamination	10 years	CellTech components
Galvanized Frame	Rust/corrosion under normal use	10 years	Excludes corrosive environments
Dexter Axles	Axle/suspension defects	5 years	Dexter manufacturer warranty
A/C & Electrical	Cooling/heating performance, breakers, lights	2 years	Excludes freeze/physical damage, misuse
Paint (Pro-Rata)	Finish defects	5 years	Cost-sharing between parties
Additional Components	Door, window, hinge, trim, track	1 year	Excludes after-market products

Table A-12: Warranty Summary

Warranty Notes:

- Applies to first retail customer only; non-transferable
- Exclusive remedy: repair or replacement at ATS ShieldSafe's option
- Customer pays transportation for warranty service
- Notice required: 10 days for manufacturing defects; 30 days for other defects
- Excludes: accident, abuse, alteration, misuse, corrosive environments, normal wear, unauthorized modifications

APPENDIX B: WIRING DIAGRAMS REFERENCE

Complete electrical wiring diagrams are provided below:

See Figure A-1

This appendix provides a reference guide to the key circuit connections and wire specifications. For detailed schematics, refer to the full wiring diagram document Figure A-1 or contact ATS ShieldSafe technical support.

Main Power Inlet to Breaker Panel

Connection	Wire Gauge	Color	Breaker/Component	Purpose
L14-30 Inlet → Breaker Panel	10 AWG	Red, White, Black, Green	Distribution panel (no main breaker)	Primary 30A 120/240V power distribution

Table A-13: Power

Breaker Panel to A/C Units

Circuit	Breaker	Wire Gauge	Color	A/C Unit	Purpose
AC #1	20A	12 AWG	Black	Fogatti InstaCool Ultra #1	16,000 BTU cooling / 12,500 BTU heating
AC #2	20A	12 AWG	Red	Fogatti InstaCool Ultra #2	16,000 BTU cooling / 12,500 BTU heating

Table A-14: A/C Panel

Breaker Panel to Interior Circuits

Circuit	Breaker	Wire Gauge	Color	Load	Purpose
Lights/Accessories	15A	14 AWG	Black, White, Green	Interior LED fixtures, rooftop porch light	Interior illumination
AC Outlets (optional)	15A GFCI	14 AWG	Black, White, Green	8 × NEMA 5-15R outlets	Worker device charging (120V AC); Power Bank add-on
USB Chargers (optional)	15A	12V DC	Red, Black, Brown	2 × 12V USB stations	Device charging (12V DC via power supply); Power Bank add-on

Table A-15: Internal Circuts Panel

12V DC Power Supply Circuit

Component	Input	Output	Purpose
DC Power Supply (Phoenix Contact PS-EE-2G/1AC/12DC/240W)	120V AC	12V DC @ 20A max	Powers USB chargers and 12V DC accessories

Table A-16: DC Power

Ground & Bonding

Connection	Wire Gauge	Color	Purpose
Ground Bar → All Metal Enclosures	10 AWG	Green	Equipment bonding and electrical safety
Main Ground Distribution	10 AWG	Green (2 × 25 ft)	Primary ground system

Table A-17: Ground/Bond

Connector Types & Standards

Connector Type	Location	Purpose
Molex MEGA-FIT (10 AWG)	L14-30 inlet connections	High-current power inlet
Molex MEGA-FIT (12 AWG)	A/C panel-to-breaker connections	A/C circuit distribution
Molex MEGA-FIT (14/16 AWG)	Light and outlet circuits	Outlet and light distribution
WAGO Lever-Nut (2/3-conductor)	Wire splices throughout panel	Quick-connect wire splicing
Yellow Ring Terminals (12-10 AWG)	A/C unit connections	High-current terminals
Wire Ferrules (various)	Breaker panel connections	Secure wire-to-breaker connections

Table A-18: Connectors

Electrical Safety Features

- **All-Pole Disconnect Switch:** 3 mm contact separation in all poles for manual de-energization
- **GFCI Breaker:** 15A GFCI on AC outlet circuit for personnel protection
- **Thermal/Electrical Overload Protection:** Built into A/C units and breaker panel
- **Grounding System:** Bonded ground bar with 10 AWG distribution to all metal enclosures
- **Cable Protection:** 1/2" self-wrap conduit for strain relief and mechanical protection

A/C Unit Electrical Specifications

Unit	Voltage	Frequency	Rated Input	Rated Current	Recommended Breaker
Fogatti InstaCool Ultra (ea.)	115V AC	60Hz, 1-phase	1,270 W	15.5A	20A (per circuit)
Dual A/C System Total	115V AC	60Hz, 1-phase	2,540 W	16A combined	2 × 20A (independent)

Table A-19: A/C Electrical

NOTE: Each A/C unit operates on an independent 20A circuit for redundancy. If one unit fails, the other continues to operate.

APPENDIX C: PARTS LIST

This section lists the serviceable and replaceable parts for the ClimateRig. To order replacement parts, contact ATS ShieldSafe at 1-800-747-9953 or Support@ClimateRig.com and reference the **Part Code** listed below.

Major Components

Part Code	Component	Qty	Description
AAFQ	Fogatti InstaCool Ultra A/C Unit	2	16,000 BTU cooling / 12,500 BTU heating; rooftop-mounted
AACB	Polycarbonate Windows	6	Interior visibility and natural light
AAAB	Extension Cord (L14-30)	1	20-foot power cord included with trailer
AAFO	Extension Cord Organizer (E-Track)	1	Cord holder for storage

Table A-20: Major Components

Electrical Components

Part Code	Component	Qty	Description
AACS	L14-30P Power Inlet	1	30A, 125/250V twist-lock power inlet
AADL	20A Breaker (QO Series, 1-Pole)	2	A/C unit circuit breakers
AADM	15A Breaker (QO Series, 1-Pole)	1	Lights and Power Bank breaker
AADH	DC Power Supply	1	120V AC input → 12V DC output for USB chargers and accessories
AADS	7-Terminal Ground Bar Kit (QO)	1	Ground distribution for breaker panel
AAFH	Breaker Mounting Block	1	Square-D QO circuit breaker mounting base, 120/240V AC, 100A
AADT	Din Rail	1	Rail for mounting electrical components
AADN	1/2 in. Snap-In Bushing	12	Wire pass-through protection (10 in panel assembly, 2 in A/C boxes)

Table A-21: Electrical Components

Connectors

Part Code	Component	Qty	Description
AAKT	WAGO 2-Conductor Lever-Nut	10	Quick-connect wire splicing (8 panel lights, 2 rear light wiring)
AAKS	WAGO 3-Conductor Lever-Nut	1	Quick-connect wire splicing (rear light wiring)
AAJF	Yellow Ring Terminal (12–10 AWG, Stud Size 8)	4	A/C unit hot and neutral connections
AAUQ	Yellow Ring Terminal (12–10 AWG, Stud Size 1/4)	2	A/C unit ground connections

Table A-22: Connectors

Lighting Components

Part Code	Component	Qty	Description
AAFF	9" Rectangular LED Dome Light	4	Interior trailer lights; 480 lumen each
AAFG	5" RV Porch/Step Light	1	Rear step area illumination; 630 lumen
AACT	Light Switch (12V Rocker)	1	Interior light on/off switch

Table A-23: Lighting Components

A/C Panel Assembly Parts

The following diagram shows how the A/C panel assembly components fit together. Reference the Part Codes below when ordering replacement parts.

Figure C-1: A/C Panel Assembly

Part Code	Component	Qty	Description
AAEA	Electric Closure Main	1	Main electric closure panel
AAEE	Electric Closure Top	1	Top electric closure panel
AAEF	Electric Closure Bottom	1	Bottom electric closure panel
AAEG	Electric Closure Shelf	1	Electric closure shelf
AAEB	Breaker Faceplate	1	Faceplate for breaker panel access
AAEC	Controller Faceplate	1	Faceplate for controller access
AAES	Breaker Cover	1	Protective cover for breaker panel
AAER	Bracket	1	Mounting bracket
AAEQ	Cover Plate	3	Panel cover plates
AAEP	Access Plate	1	Connects the two panels after installation
AAEO	Roof Channel	1	Roof mounting channel
AAEN	A/C Channel	2	A/C unit mounting channels
AAEM	Vertical Channel	1	Vertical mounting channel
AAEL	A/C Cross Cleat	8	A/C mounting cleats (4 in panel assembly, 4 for installation)
AAEK	Light Bracket	4	Interior light mounting brackets
AAEJ	A/C Closure	2	A/C unit closure panels
AAEI	A/C Cross Brace	4	A/C structural cross braces
AAEH	A/C Spacer Bracket	1	A/C unit spacer bracket
AAED	Top Brace	4	Structural top braces

Table A-24:AC panel Assembly

Hardware & Fasteners

Part Code	Component	Qty	Description
AADZ	#8 × 1-1/4" SS Phillips Drilling Screw	5	Rear step light and inlet wiring mounting
AACW	8/32 × 1/4" Pan Self-Threading Screw	1	Wall channel to breaker box connection
AAJL	1/4"-20 × 3/4" SS Hex Cap Screw	4	Breaker box installation
AAJN	1/4" SS Lock Washer	4	Breaker box installation
AAJB	1/4" × 1" SS Fender Washer	4	Breaker box installation
AAHA	1/4"-20 Nylock SS Nut	4	Breaker box installation
AACX	1/8" Zinc-Plated Blind Rivets (0.126–0.187)	9	Access panel, wall panel, and raceway mounting
AADU	10-32 Snap-In Nut (0.025–0.063)	14	Panel mounting hardware

Table A-25: Hardware/Fasteners

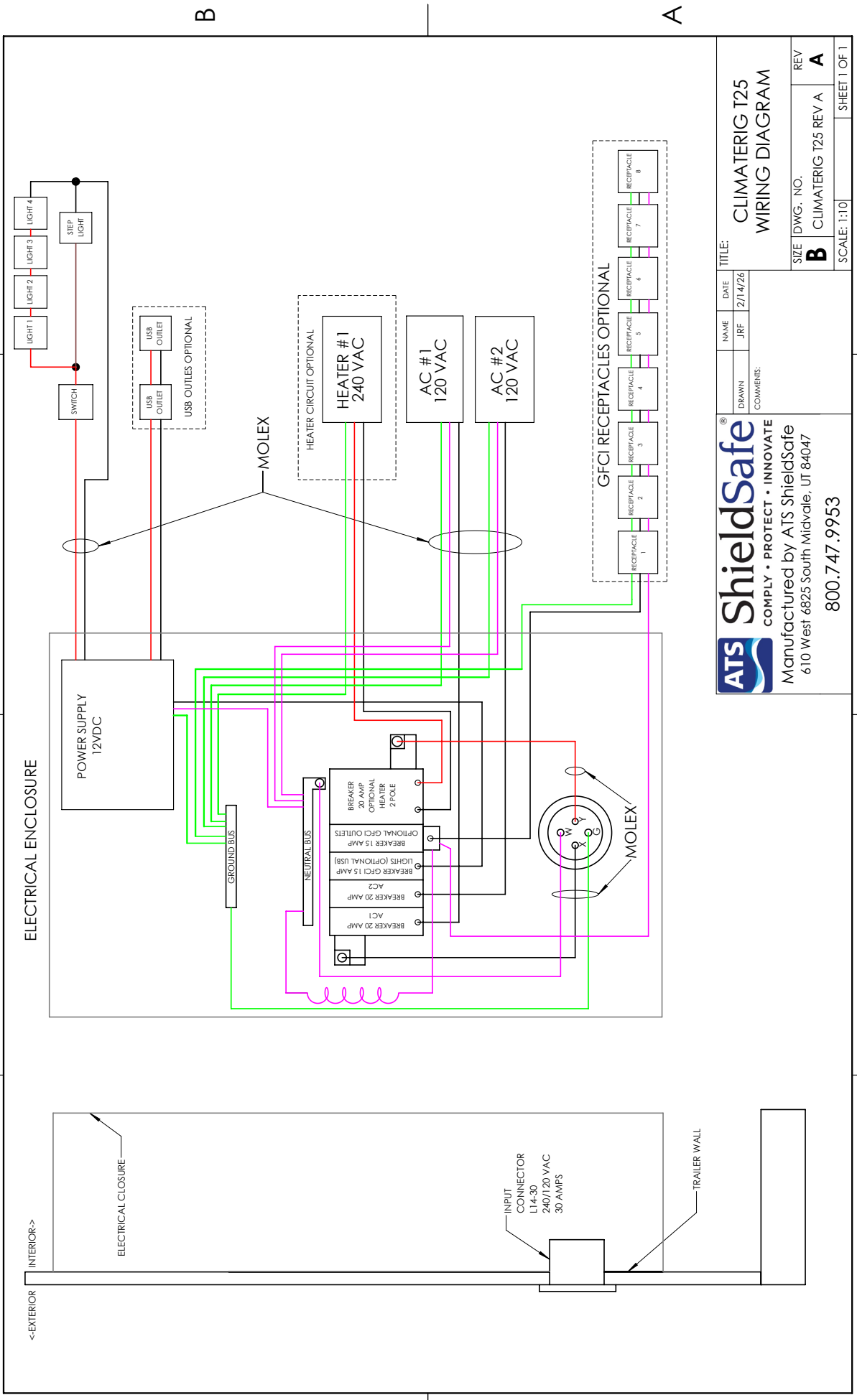

CLIMATERIG T25
WIRING DIAGRAM
SIZE B
DWG. NO. CLIMATERIG T25 REV A
REV A
SCALE: 1:10
SHEET 1 OF 1
DRAWN JRF 2/14/26
COMMENTS:
ShieldSafe
COMPLY • PROTECT • INNOVATE
Manufactured by ATS ShieldSafe
610 West 6825 South Midvale, UT 84047
800.747.9953
ELECTRICAL ENCLOSURE
POWER SUPPLY 12VDC
GROUND BUS
NEUTRAL BUS
BREAKER 20 AMP OPTIONAL HEATER 2 POLE
OPTIONAL GFCI OUTLETS BREAKER 15 AMP
LIGHTS (OPTIONAL USB) BREAKER GFCI 15 AMP
AC2 BREAKER 20 AMP
AC1 BREAKER 20 AMP
MOLEX
W
X
Y
G
MOLEX
HEATER CIRCUIT OPTIONAL
HEATER #1 240 VAC
AC #1 120 VAC
AC #2 120 VAC
GFCI RECEPTACLES OPTIONAL
RECEPTACLE 1
RECEPTACLE 2
RECEPTACLE 3
RECEPTACLE 4
RECEPTACLE 5
RECEPTACLE 6
RECEPTACLE 7
RECEPTACLE 8
USB OUTLES OPTIONAL
USB OUTLET
USB OUTLET
SWITCH
LIGHT 1
LIGHT 2
LIGHT 3
LIGHT 4
STEP LIGHT
<-EXTERIOR
INTERIOR->
ELECTRICAL CLOSURE
INPUT CONNECTOR L14-30 240/120 VAC 30 AMPS
TRAILER WALL

Figure A-1

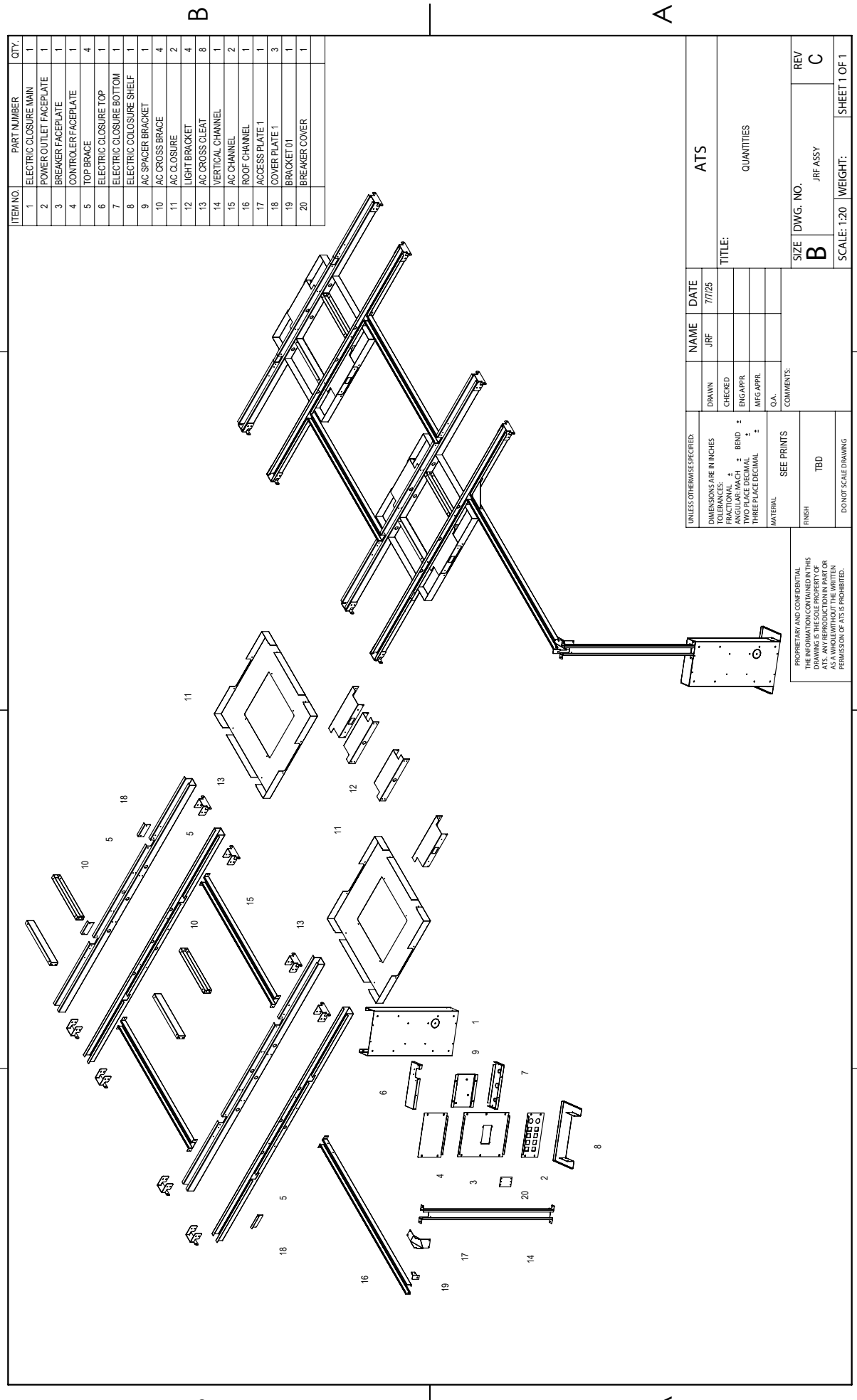

ITEM NO. PART NUMBER QTY.
1 ELECTRIC CLOSURE MAIN 1
2 POWER OUTLET FACEPLATE 1
3 BREAKER FACEPLATE 1
4 CONTROLER FACEPLATE 1
5 TOP BRACE 4
6 ELECTRIC CLOSURE TOP 1
7 ELECTRIC CLOSURE BOTTOM 1
8 ELECTRIC COLOSURE SHELF 1
9 AC SPACER BRACKET 1
10 AC CROSS BRACE 4
11 AC CLOSURE 2
12 LIGHT BRACKET 4
13 AC CROSS CLEAT 8
14 VERTICAL CHANNEL 1
15 AC CHANNEL 2
16 ROOF CHANNEL 1
17 ACCESS PLATE 1 1
18 COVER PLATE 1 3
19 BRACKET 01 1
20 BREAKER COVER 1
UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL ±
ANGULAR: MACH ± BEND ±
TWO PLACE DECIMAL ±
THREE PLACE DECIMAL ±
MATERIAL SEE PRINTS
FINISH TBD
DO NOT SCALE DRAWING
NAME DATE
DRAWN JRF 7/7/25
CHECKED
ENG APPR.
MFG APPR.
Q.A.
COMMENTS:
PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF ATS. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF ATS IS PROHIBITED.
ATS
TITLE:
QUANTITIES
SIZE B
DWG. NO. JRF ASSY
REV C
SCALE: 1:20
WEIGHT:
SHEET 1 OF 1

Figure A-2

Power Bank Components (Optional Add-On)

Part Code	Component	Qty	Description
AAFI	12V USB Charger (Multi-Port)	2	Worker device charging stations
AAFJ	AC Outlet (NEMA 5-15R)	8	120V, 15A standard outlets
AAFK	15A GFCI Breaker (QO Series, 1-Pole)	1	Ground-fault protection for AC outlets
AAFL	Power Outlet Faceplate	1	Power Bank faceplate panel

Table A-26: Power Bank Components

Replacement Air Filter & Refrigerant Service

A/C System Service:

- Contact Fogatti or ATS ShieldSafe for R32 refrigerant service
- Only certified technicians may service flammable-refrigerant systems
- See Chapter 6: Maintenance for service intervals

Authorized Service Centers:

- ATS ShieldSafe: 1-800-747-9953 (24 hours a day, 7 days a week)
- Email: Support@ClimateRig.com
- Fogatti authorized distributors (contact Fogatti for nearest location)

APPENDIX D: MAINTENANCE LOG TEMPLATES

Use these templates to track maintenance tasks, inspections, and repairs for your ClimateRig.

Maintenance Log — General Format

Date	Task Performed	Technician Name	Hours	Notes / Issues Found	Next Due Date	Signature
MM/DD/YYYY	(e.g., A/C filter visual inspection)	(Full name)	(Time spent)	(Condition, findings, corrective action)	MM/DD/YYYY	

Instructions:

- Enter the date in MM/DD/YYYY format
- Describe the task clearly and specifically
- Include the technician's name and credentials (if applicable)
- Note any defects, required repairs, or parts replaced
- Record the next scheduled date for the task
- Sign or initial the entry

Daily Pre-Operation Inspection Checklist

Perform this checklist every day before operating the trailer.

Item	Normal	Minor Issue	Major Issue	Notes
Exterior & Structure				
Panels (no dents, cracks, corrosion)	☐	☐	☐	
Door latches and locks (secure, operational)	☐	☐	☐	
Windows and seals (intact, no cracks)	☐	☐	☐	
Tires and wheels (proper pressure, no damage)	☐	☐	☐	
Hitch and coupler (clean, properly connected)		☐	☐	
Interior & Climate				
Interior cleanliness (debris-free)	☐	☐	☐	
A/C display and controls (responsive)	☐	☐	☐	
Interior lights (all functional)	☐	☐	☐	
Bench seating (secure, undamaged)	☐	☐	☐	
Electrical				
Outlets (no visible damage, operational)	☐	☐	☐	
USB chargers (functional)	☐	☐	☐	
Breaker panel cover (secure, accessible)	☐	☐	☐	
Power Connection				
Inlet plug and connectors (clean, dry)	☐	☐	☐	
Extension cord (no cuts, visible damage)	☐	☐	☐	

Action Items:

- **Normal:** Proceed with operation; log in daily record
- **Minor Issue:** Monitor; schedule repair at next opportunity
- **Major Issue:** Do NOT operate; contact ATS ShieldSafe immediately

Monthly Maintenance Log

Date	A/C Filter Inspection	Exterior Wash	Interior Sweep	Electrical Inspection	Technician	Notes
MM/DD/YYYY	☐	☐	☐	☐		
	☐	☐	☐	☐		
	☐	☐	☐	☐		
	☐	☐	☐	☐		

Seasonal Maintenance Log

Item	Spring	Summer	Fall	Winter	Notes
A/C system test	☐	☐	☐	☐	
Heating system test	☐	☐	☐	☐	
Winterization prep	N/A	N/A	☐	☐	
Spring recommissioning	☐	N/A	N/A	N/A	
Panel sealant inspection	☐	☐	☐	☐	
Brake system inspection	☐	☐	☐	☐	

APPENDIX E: GLOSSARY OF TERMS

This glossary defines technical and acronymic terms used in the ClimateRig Owner's Manual.

Term	Definition
A2L Refrigerant	Lower-flammability refrigerant (e.g., R32); classified as mildly flammable but safe when properly contained and handled by certified technicians.
ANSI Z535.6	American National Standards Institute standard for hazard label signal words (DANGER, WARNING, CAUTION, NOTICE) and safety sign formatting.
ATS ShieldSafe	Manufacturer of the ClimateRig and parent company of safety equipment product lines.
Axle Weight Rating (AWR)	Maximum safe weight that can be supported by a single axle or pair of axles; denoted as GAWR (Gross Axle Weight Rating).
Breaker, Circuit	Electrical switch that automatically interrupts current flow when a circuit overloads or short-circuits; provides overcurrent protection.
BTU (British Thermal Unit)	Standard unit of heat energy; 1 BTU = amount of heat needed to raise 1 pound of water 1°F. Used to rate cooling and heating capacity.
Cal/OSHA	California Division of Occupational Safety and Health; enforces state-specific occupational safety regulations including heat-illness prevention standards.
CellTech™	Patented panel technology used in the base trailer; all-steel skins with structural adhesive core for durability and thermal efficiency.
CFM (Cubic Feet Per Minute)	Measurement of air volume flow rate; used to rate A/C system airflow capacity.
ClimateRig™	Registered trademark of ATS ShieldSafe; official product brand name for the Cool-Down Trailer.
CoolRig™	Alternative trademark used by ATS ShieldSafe for ClimateRig product lines on some distribution channels.
DANGER	Highest-level hazard signal word per ANSI Z535.6; indicates imminent hazard that WILL cause death or serious injury.
DC (Direct Current)	Electric current that flows in one direction; used for low-voltage applications like USB chargers and interior lighting controls.
Dexter	Manufacturer of commercial trailer axles and suspension components; standard supplier for tandem-axle trailers.
DOT (Department of Transportation)	U.S. federal agency that sets standards for vehicle towing safety, lighting, brakes, and trailer regulations.
DOT Date Code	A four-digit number molded into the tire sidewall indicating the week and year of manufacture (e.g., 2322 = week 23, year 2022). Used to determine tire age for replacement scheduling.
Dry Weight	Total weight of a trailer when empty (no payload); used to calculate tongue weight and determine towability.
E-Track	Integrated vertical steel channels with pre-drilled holes; used for securing cargo or equipment with straps or chains.
EER (Energy Efficiency Ratio)	Measure of A/C system efficiency; calculated as BTU cooling capacity divided by watts of electrical input. Higher EER = more efficient cooling.
Emergency Exit	Designated door or hatch designed for rapid evacuation in emergency situations; must be clearly marked and unobstructed.
Extension Cord	Flexible electrical cable with plug and receptacle; used to connect trailer inlet to external power source (generator or shore power).
Flammable Refrigerant	Refrigerant (e.g., R32) that may ignite if exposed to ignition sources; handled only by certified technicians in well-ventilated areas.
Fogatti	Manufacturer of the InstaCool Ultra rooftop A/C units installed on the ClimateRig.
GAWR (Gross Axle Weight Rating)	Maximum safe combined weight (payload + empty weight) on a single axle or pair of axles. ClimateRig GAWR: 7,000 lbs.

Glossary Continued...

Term	Definition
GFCI (Ground-Fault Circuit Interrupter)	Electrical breaker that shuts off power if a dangerous ground fault is detected; protects personnel from electrical shock.
GVWR (Gross Vehicle Weight Rating)	Maximum safe total weight of the trailer when fully loaded.
Hitch, 2-5/16" Ball	Standard North American trailer coupler with 2-5/16-inch ball mount; rated for light-to-medium-duty towing.
Hz (Hertz)	Unit of electrical frequency; 60 Hz (U.S. standard) = 60 cycles per second of AC current.
L14-30	NEMA designation for a 30-ampere, 125/250-volt twist-lock power inlet; standard for industrial generators and mobile equipment.
LED (Light-Emitting Diode)	Energy-efficient light source used in interior and exterior trailer lighting; long-lasting and bright.
NEC (National Electrical Code)	Standard for safe electrical design, installation, and inspection in the United States; enforced by local jurisdictions.
NEMA (National Electrical Manufacturers Association)	Standards organization that defines electrical connector and outlet specifications (e.g., NEMA 5-15R = standard 15A outlet).
NFPA 1584	National Fire Protection Association standard for fire-service emergency medical services; provides guidance on heat-illness prevention for first responders.
Non-Ducted	A/C system design without ductwork; cooling air distributed directly into space without conduits; common in mobile units.
OSHA (Occupational Safety and Health Administration)	Federal agency that enforces workplace safety standards; proposed heat-illness prevention rule effective for most states.
R32 Refrigerant	Modern, low-global-warming-potential (GWP ~675) refrigerant used in Fogatti A/C units; high-efficiency cooling with lower environmental impact than R410A.
Receptacle (Electrical)	Female outlet socket that accepts a plug; standard household outlet is NEMA 5-15R (15 amperes, 120 volts).
Refrigerant	Fluid circulating in A/C system that absorbs and releases heat through phase changes (liquid ↔ gas); R32 is used in ClimateRig units.
Rooftop Mount	A/C unit or other equipment installed on the trailer roof; Fogatti units are rooftop-mounted for space efficiency. Roof rated for <350 lbs; access limited to brief single-person maintenance.
Schematic	Electrical diagram showing circuit layout, components, and wire connections; used for troubleshooting and maintenance.
Shore Power	Fixed electrical power source at a location (as opposed to portable generator); typically 120/240V AC.
Signal Word	One of four standardized hazard-alert terms (DANGER, WARNING, CAUTION, NOTICE) per ANSI Z535.6; conveys severity of hazard.
Tandem Axles	Two independent axles mounted in series on a trailer; provides greater load distribution and stability.
Thermostatic Control	Automatic temperature regulation system; senses current temperature and switches A/C on/off to maintain set-point.
Tongue Weight	Downward force exerted on the tow vehicle hitch by the trailer; typically 10–15% of trailer dry weight. ClimateRig estimated: 250–375 lbs.
Control Panel (Per-Unit)	Built-in control interface on each A/C unit with capacitive touch buttons; displays temperature, modes, and allows direct A/C adjustment.
Tow Rating	Maximum safe towing capacity of a vehicle; ClimateRig is rated for half-ton (light-duty) pickup trucks.
Transporting	Moving the trailer from one location to another by towing behind a powered vehicle.
WBGT (Wet Bulb Globe Temperature)	Heat-stress index combining air temperature, humidity, sun exposure, and air movement; used by OSHA and occupational health professionals to assess heat-illness risk.

Term	Definition
WiFi	Wireless networking technology; Fogatti A/C units support remote control via WiFi smartphone app.
Winterization	Preparation of trailer for cold-weather storage, including draining lines, weatherproofing, and ensuring heating systems are functional.

APPENDIX F: CONTACT INFORMATION & RESOURCES

ATS ShieldSafe (Manufacturer & Service)

Corporate Office & Customer Service:

- **Phone:** 1-800-747-9953
- **Website:** www.climaterig.com
- **Email:** Support@ClimateRig.com
- **Hours:** 24 hours a day, 7 days a week
- **Mailing Address:** ATS ShieldSafe, 610 West 6825 South, Midvale, UT 84047

Services Available:

- Product information and specifications
- Technical support and troubleshooting
- Warranty claims and service scheduling
- Replacement parts ordering
- Field service and maintenance programs

CellTech Metals (Base Trailer Manufacturer)

Manufacturer & Technical Support:

- **Company:** CellTech Metals
- **Location:** Elm Mott, TX (U.S.)
- **Website:** www.celltechtrailer.com
- **Contact:** Via website for technical questions about base trailer, panels, warranty claims

Services Available:

- Base trailer specifications and customization
- Panel repair and replacement information
- Warranty coverage for structure and panels
- Technical drawings and service documentation

Fogatti, Inc. (A/C Unit Manufacturer)

Support & Technical Information:

- **Website:** www.fogattiliving.com
- **Product Page:** Fogatti InstaCool Ultra Rooftop RV A/C
- **Support:** Contact Fogatti for R32 refrigerant service, A/C warranty claims, and technical assistance

Services Available:

- A/C unit operation and control support
- Warranty claims for cooling/heating performance
- Refrigerant service (certified technicians only)
- Replacement parts and maintenance supplies

Regulatory & Safety Resources

OSHA (Occupational Safety and Health Administration):

- **Website:** www.osha.gov
- **Heat-Exposure Resources:** www.osha.gov/heat-exposure
- **WBGT Calculator:** www.osha.gov/heat-exposure/wbgt-calculator
- **Proposed Heat-Illness Standard:** Federal Register Vol. 90, No. 37 (March 2025)

NFPA (National Fire Protection Association):

- **Standard 1584:** Fire Service Emergency Medical Services
- **Website:** www.nfpa.org

Cal/OSHA (California Occupational Safety and Health):

- **Heat Illness Prevention Standard:** 8 CCR Section 3395
- **Website:** www.dir.ca.gov/dosh

EPA (Environmental Protection Agency):

- **R32 Refrigerant Info:** SNAP (Significant New Alternatives Policy)
- **Website:** www.epa.gov/ozone

Emergency & Safety Support

Emergency Services:

- **Dial 911** for medical emergencies, fires, or life-threatening situations

Poison Control (Refrigerant Exposure):

- **Dial 1-800-222-1222** (U.S. Poison Control Center)

Towing & Transportation Resources

DOT (Department of Transportation):

- **Website:** www.fmcsa.dot.gov (Federal Motor Carrier Safety Administration)
- **Towing Requirements:** See Chapter 8 of this manual or contact your state DOT

Trailer Safety Standards:

- Consult your tow vehicle manufacturer's manual for hitch and brake controller specifications
- Ensure brake controller is properly calibrated for the trailer's weight and load

Authorized Service Network

For authorized ClimateRig service and maintenance in your area:

- **Contact ATS ShieldSafe:** 1-800-747-9953
- **Visit:** climaterig.com/service-locations
- **Ask about:** Mobile service options, warranty repair coverage, parts availability

Accessories & Parts Ordering

OEM Parts & Accessories:

- **ATS ShieldSafe Direct:** 1-800-747-9953

Additional Resources

Manual Updates & Documentation:

- Visit climaterig.com for the latest manual versions
- Download the ClimateRig Wiring Harness v3 diagram
- Request interior layout drawings or technical specifications from ATS ShieldSafe

Product Registration:

- Register your trailer at climaterig.com to activate warranty coverage and receive product updates

Feedback & Improvements:

- Send manual corrections, suggestions, or product feedback to ATS ShieldSafe
- Your input helps us improve documentation and product support**.**

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Quick-Reference Emergency Information Card

ClimateRig Cool-Down Trailer

Cut out or copy this card and post it inside the trailer near the rear door.

EMERGENCY CONTACTS

Service	Number
Emergency (Fire/Medical/Police)	911
Poison Control Center	1-800-222-1222
ATS ShieldSafe (24/7)	1-800-747-9953
ATS ShieldSafe Email	Support@ClimateRig.com

HEAT ILLNESS — KNOW THE SIGNS

Heat Stroke — CALL 911 IMMEDIATELY

Signs: Hot, red, dry skin. Confusion. Slurred speech. Loss of consciousness. Seizures. Body temperature above 104°F.

Action: Call 911. Move worker to ClimateRig or shade. Cool with water, ice, or wet cloths on neck, armpits, and groin. Do NOT give fluids if unconscious.

Heat Exhaustion — ACT FAST

Signs: Heavy sweating. Cold, pale, clammy skin. Weakness. Dizziness. Nausea. Fast, weak pulse. Headache.

Action: Move worker to ClimateRig. Remove excess clothing. Apply cool, wet cloths. Give small sips of water. If vomiting or symptoms worsen, call 911.

ELECTRICAL EMERGENCY

1. Do NOT touch the person if they are in contact with a live power source.
2. Disconnect power at the source (turn off generator or disconnect shore power).
3. Call 911.
4. Begin CPR if the person is unresponsive and not breathing.

CARBON MONOXIDE (Generator Use)

Signs: Headache. Dizziness. Nausea. Confusion. Weakness.

Action: Move everyone to fresh air immediately. Call 911. Do NOT re-enter the area until cleared by emergency services.

FIRE

1. Evacuate all workers through the nearest exit (rear door or front emergency exit).
2. Close doors behind you if safe to do so.
3. Move at least 100 feet from the trailer.
4. Call 911.
5. Do NOT re-enter.

TRAILER QUICK SPECS

Item	Value
Max Occupancy	18 workers
Power Inlet	L14-30P, 30A, 120/240V
A/C System	2 × 16,000 BTU (Fogatti InstaCool Ultra)
Refrigerant	R32 (mildly flammable — no open flames)
Dry Weight	~2,500 lbs
Hitch	2-5/16" ball

YOUR TRAILER INFORMATION

Field	Record Here
VIN / Serial Numbe	_____
Date of Purchase	_____
Owner / Company	_____
Site Supervisor	_____
Nearest Hospital	_____
Hospital Phone	_____