THERMAL INTELLIGENCE

BASECAMP OPERATOR MANUAL

Thermal Intelligence

#100, 15330 123 Avenue NW
Edmonton, Alberta T5V 1K8
1 (855) 554 4344

https://thermalintelligence.com/

Table of Contents

1. Introduction 4

1.1 BASECAMP Identification: 4

1.2 Contact Information 5

2. Exterior Component Locations 6

3. Interior Component Locations 7

3.1 Passenger Side (Right): 7

3.2 Drivers Side (Left): 8

4. Safety 9

4.1 General Safety Information: 9

4.2 Operator Safety: 9

5. Transportation 10

5.1 Transportation Safety: 10

5.2 Towing with Vehicle: 10

5.3 Transport on Flat Bed: 11

5.4 Vertical Lifting by Crane: 11

6. Pre-Operation 12

6.1 Daily Walk Around Inspection: 12

6.2 Refueling Safety: 12

7. Operating 13

7.1 Unit Start Up: 13

7.2 Unit Start Up – Winter: 13

7.3 Heat Function: 13

7.4 Heater & Engine Shutdown: 14

7.5 Generator Usage: 14

7.6 Light Tower: 15

7.7 Connect Ducting: 16

7.8 Wi-Fi Remote Probe: 16

7.9 Beacon Light: 16

8. Maintenance 17

8.1 Maintenance Overview: 17

8.2 Maintenance Safety: 17

8.3 Engine Service Intervals 17
8.4 Maintenance Tasks: 18
8.4.1 Change Engine Oil: 18
8.4.2 Change Air Filters: 18
8.4.3 Change Fuel Filter: 18
8.4.4 Fuel/Water Separator: 19
8.4.5 Priming the BASECAMP: 19
8.4.6 Oil Filter: 20
8.4.7 Adding Coolant & Coolant Check: 20
8.4.9 Engine Oil Check: 21
8.4.10 Battery Check: 21
8.4.11 Exhaust Heat Exchanger Check and Drain: 22
8.4.12 Blower Belt Replacement (Poly Chain Belt): 23
8.4.13 Blower Belt Tension (Poly Chain Belt): 23
8.4.14 Blower Belt Replacement (V-Belt): 24
8.4.15 Blower Belt Tension (V-Belt): 24
8.4.16 Light Tower Maintenance: 25
8.4.17 Light Tower Lens Adjustment: 25
9. Seasonal 26
9.1 Off Season Maintenance: 26
9.2 Seasonal Checklist: 26
10. Recommended Filter & Fluids 27
10.1 Filters: 27
10.2 Fluids: 27
11. Technical Specifications 28
12. Dimensions 29
12.1 Front View: 29
12.2 Side View: 30
13. Tire & Rim Specifications 31
13.1 Rims: 31
13.2 Tires: 31
14. Power & Electrical Schematic 32

1. Introduction

Welcome and thank you for being a customer of Thermal Intelligence! We are looking forward to the success that BASECAMP will bring you and your worksite. Whatever you need we are here to help – Thermal Intelligence prides itself on providing you with detailed technical support for your BASECAMP.

Safe & efficient operation of BASECAMP requires that any individuals maintaining the unit read and understand the information contained in this Operator's Manual.

The BASECAMP is intended to provide heat on outdoor worksites and in other outdoor applications. Using the machine for any other purpose could permanently damage the machine or seriously injure the operator or other persons on the work site. Machine damage caused by misuse is not covered under warranty.

BASECAMP has been designed and built in accordance with the latest global safety standards and its ultra-efficient design has been awarded the Green Seal Certification of Environmental Innovation for its revolutionary ultra-efficient temporary heating, power generation, and lighting products. BASECAMP has been carefully engineered to eliminate hazards as best as possible, and to increase operator safety. However, some risks may remain even after protective measures have been taken. On this machine, they may include exposure to:

1. exhaust emissions
2. hot surfaces such as exhaust vents and air outlet
3. fuel and fuel fumes when refueling

To protect yourself and others, thoroughly read and understand the safety information presented in this manual before operating the machine.

1.1 BASECAMP Identification:

1. A decal listing the Serial Number is located on the electrical panel door. For reference, record the serial number in the space provided below. You will need the serial number when requesting parts & service:

Serial Number: _____

1.2 Contact Information

1. **Phone: 1 (855) 554-4344**
   a. The main technical support phone line is staffed Monday-Friday 8:00 AM to 4:30 PM MST excluding holidays.

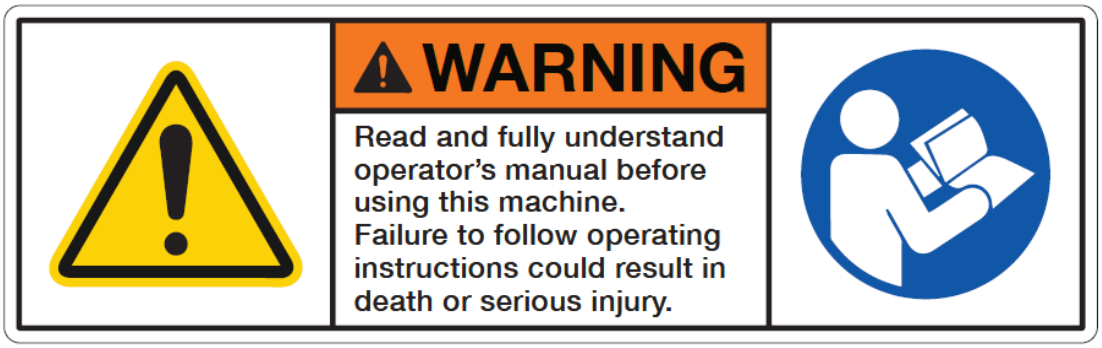
2. **After Hours Support:**
   a. Calls received outside of regular hours are directed to the On-Call Technician. After hours support is reserved for issues that cannot wait until the next business day for resolution. If no answer, please leave a message and we will get back to you as soon as possible.

3. **Email: basecamp@thermalintell.com**
   a. Feel free to email us at any time with technical questions or parts inquiries. Please include the Serial Number of your BASECAMP if you have a specific question about your machine so we can better help you.

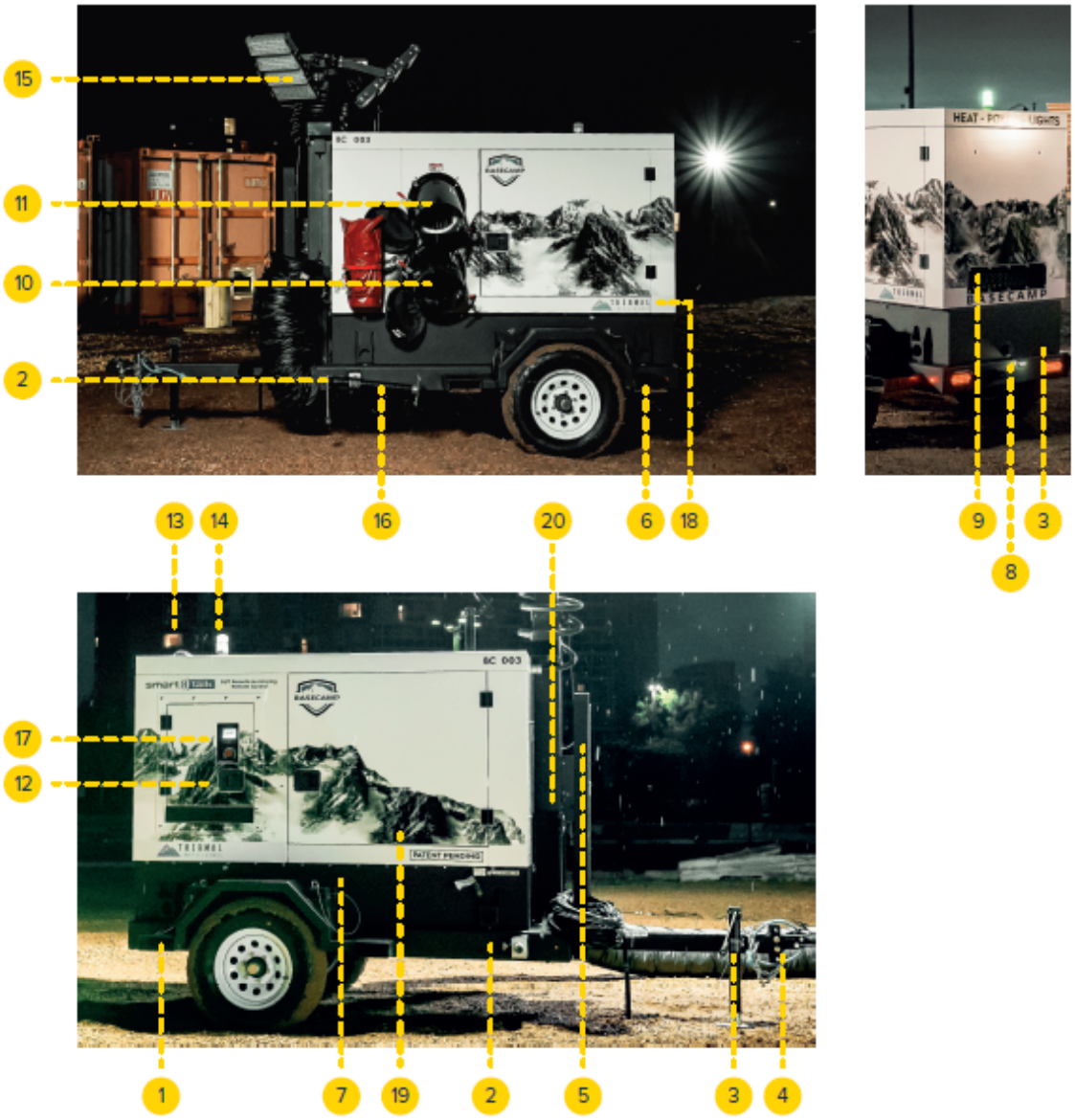
4. **Support Request Form**
   a. To best support you and your BASECAMP please use the following form to submit a detailed explanation of the support request and add any relevant images to help us support you.
      i. https://thermalintelligence.com/basecamp-support-request/

For additional troubleshooting, field support and maintenance videos visit our website: **https://thermalintelligence.com/support-content**

Thermal Intelligence is committed to the continual development and improvement of new products in industrial heating. We pride ourselves on providing you with the safest, most efficient, and reliable source of Heat, Power, and Lights.



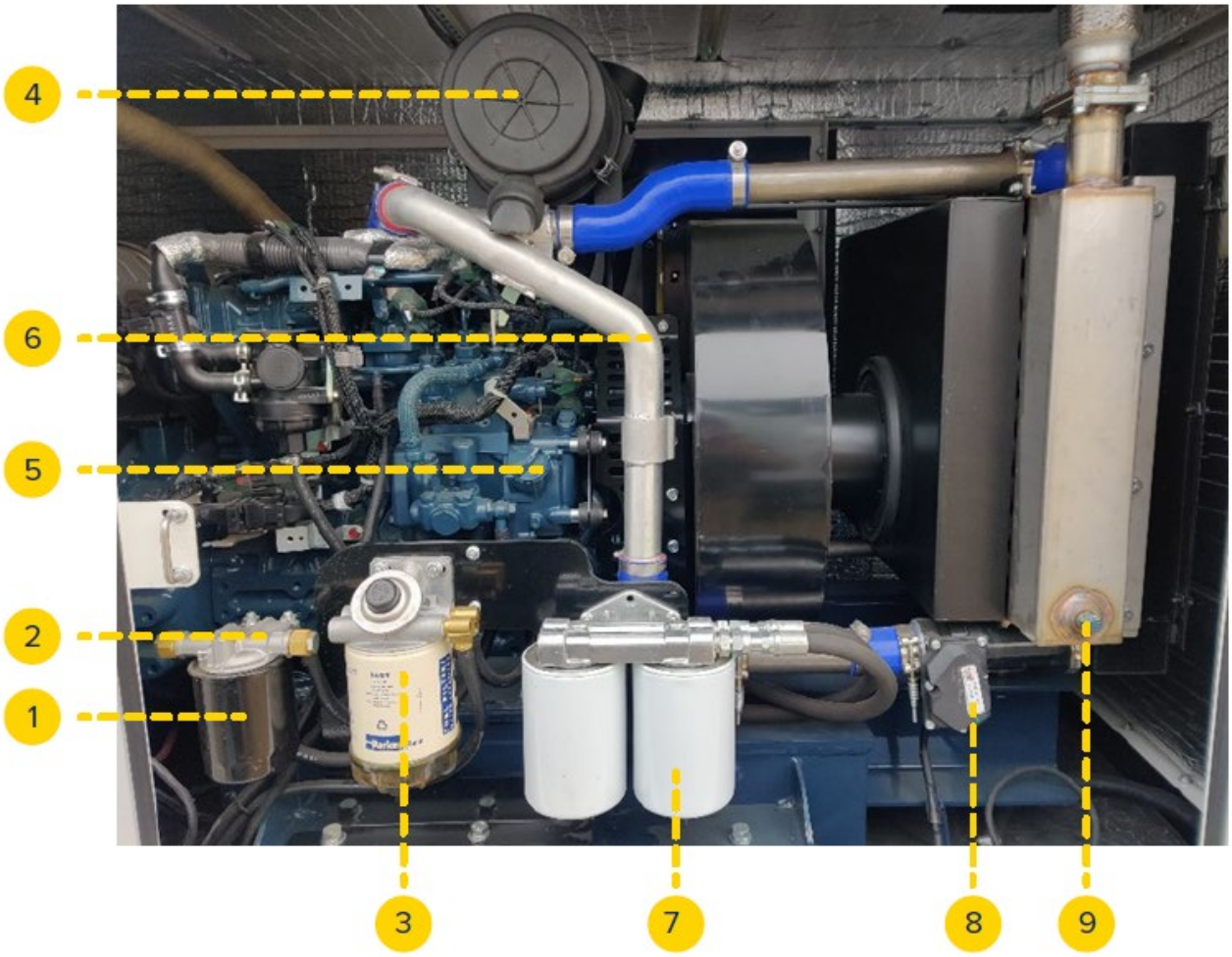
2. Exterior Component Locations



1. Forklift Pockets
2. Outrigger Stabilizers
3. Fixed Stabilizers
4. Interchangeable Hitch
5. Ducting Storage Posts
6. Transport Tie Down Points (both sides)
7. Wheel Chocks (both sides)
8. Containment Tank Drain with Internal Fuel Drain
9. Rear Cold Air Intake
10. 12" Side Intake - Recirculation Port
11. 12" Side Outlet
12. Control Panel & Electrical Panel
13. SmartTalk Antenna
14. Tri-Color Beacon Light
15. Electronic Light Mast
16. VIN, Serial Number, Tire & Loading Information
17. Emergency Shut Down Push Button
18. Diesel Fuel Filler (interior location)
19. Oil Dipstick, Fuel, and Oil Filters (interior location)
20. Light Mast Switch

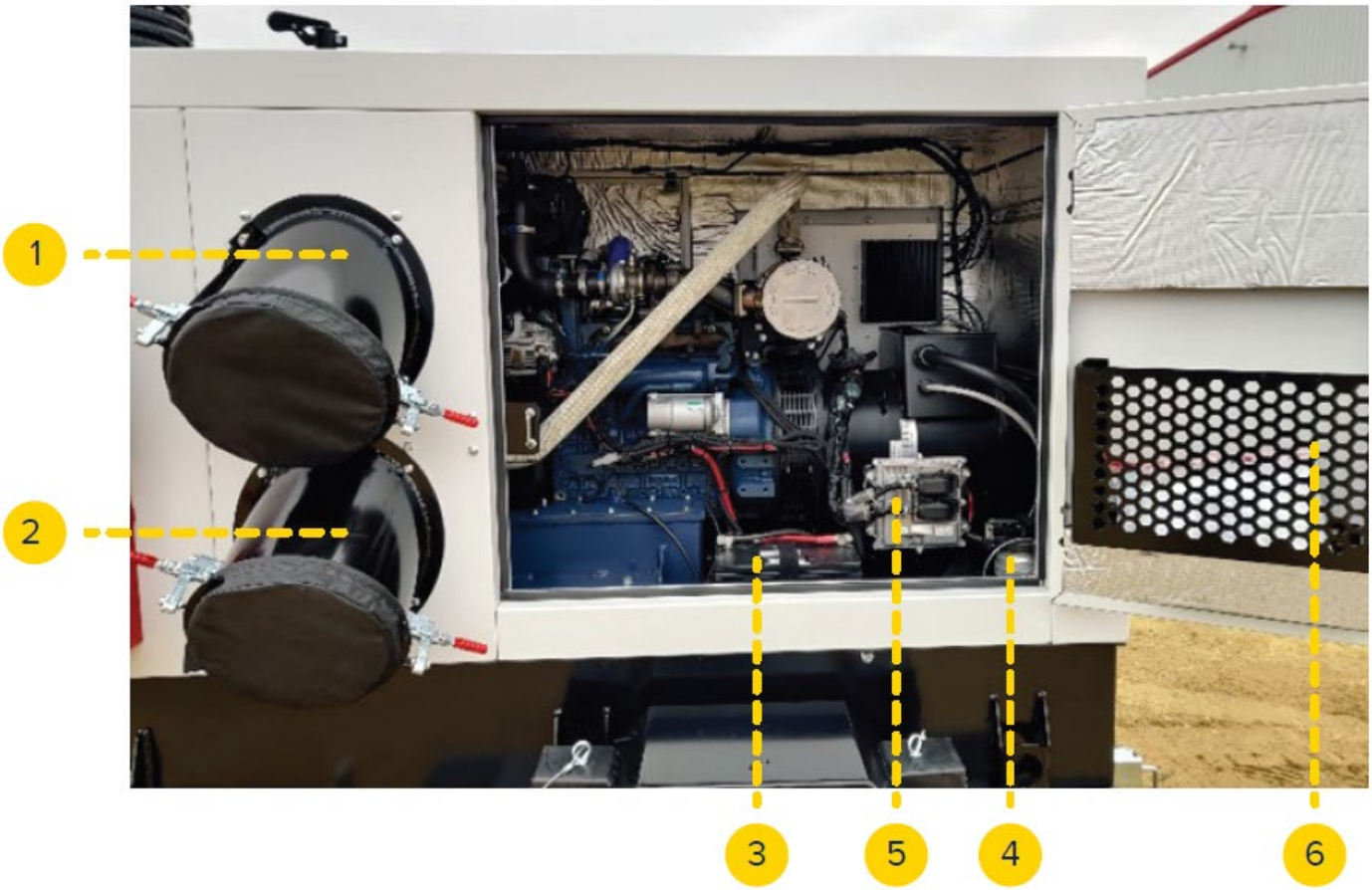
3. Interior Component Locations

3.1 Passenger Side (Right):



1. Fuel Filter
2. Oil Dip Stick
3. Fuel Water Separator
4. Air Filter Housing
5. Oil Fill
6. Fan Belt
7. Oil Filters
8. Positive Air Shutdown Valve
9. Exhaust Heat Exchanger Drain

3.2 Drivers Side (Left):



1. Heater Outlet
2. Heater Inlet
3. Unit Battery
4. Fuel Tank Inlet
5. Engine ECM
6. Consumables Shelf & Manuals

4. Safety

4.1 General Safety Information:

1. It is required that anyone towing, operating, or maintaining this equipment read and understand this manual.
2. This manual was written specifically for the safe operation and maintenance of this equipment. Your safety and the safety of others depends on the proper and safe use of this equipment. Do not modify or alter this equipment or any of its components without the written authorization from Thermal Intelligence.
3. Thermal Intelligence is constantly working to improve its products. We reserve the right to make improvements or changes to subsequent models, with no obligation to make these changes or additions to previous models.
4. Thermal Intelligence cannot anticipate every possible circumstance that might involve a hazard. The warnings in this manual, and decals affixed to the unit are, therefore, not all inclusive. If using an operating technique that the manufacturer does not specifically recommend, verify that it is safe for others. Also make sure the procedure, work method or operating technique utilized does not render the equipment unsafe.

4.2 Operator Safety:

1. The following safety items are for the safe operation of the unit. Failure to meet or exceed any of the following safety procedures will result in damage to the heater and/or property damage as well as serious injury or death.
    a. Keep the area around the heater clear.
    b. Never smoke when refueling.
    c. The operator must wear approved personal protective equipment (PPE) especially for the eyes, ears, and hands.
    d. Never remove safety guards, shields, or switches when operating the heater.
    e. During operations the unit can have extremely hot surfaces. Be very careful not to touch heat transfer surfaces, heat exchanger, engine, or engine exhaust surfaces.
    f. Always use caution around the rotating shafts and engine. Loose clothing or hair can be pulled into the shafts or engine causing serious injury or death.

5. Transportation

5.1 Transportation Safety:

1. Trailer Towing Can Be Hazardous:
    a. BASECAMP is equipped with electronic trailer brakes. Allow for increased braking distance due to weight.
    b. Reduce speed under adverse weather, road, or terrain conditions.
    c. Avoid sudden lane changes, U-turns, etc.
    d. Sudden maneuvers may cause tipping, rollover, jackknifing or sliding of the trailer and without warning loss of control of the towing vehicle may result.

5.2 Towing with Vehicle:

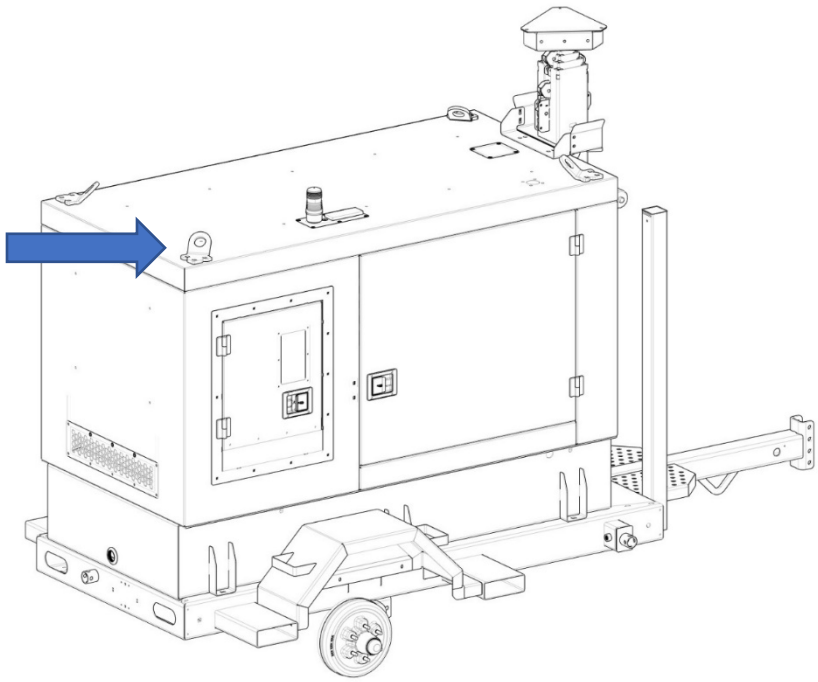
1. Ensure that BASECAMP has been shut off, the breakers are all in the off position and the Master Battery Connect Switch has been turned off (control panel should be off).
2. Open the engine compartment door on the same side as the input/output chutes and make sure the fuel cap is properly secured.
3. Walk around the unit ensuring that side and rear jacks are all retracted and properly secured as well as all doors are fully closed. Secure ducting on ducting posts.
4. Ensure that the light tower has been fully lowered.
5. Once the BASECAMP's hitch has been secured to the towing vehicle, remove all wheel chocks, and place them back in the storage position.
6. Finally, attach the break away chains, emergency brake cable, and electrical cable, test for brake and light function.
7. Inflate tires to 65 psi & check wheel lug nuts; Tighten to 80 ft-lb.
8. Towing Vehicle:
    a. Check that the towing vehicle is rated to tow the load.
    b. Check that the towing vehicle is in serviceable condition.
    c. Do any necessary service/maintenance on the towing vehicle before towing.

5.3 Transport on Flat Bed:

1. The unit can be lifted by a forklift from either side using the fork pockets.
2. Arrange the unit(s) on the flat bed, leaving enough room for movement between units, especially the overhead lights if transporting multiple BASECAMP units.
    a. Make sure overhead lights are secure within the bracket prior to loading.
3. Secure the unit using the chains through the fork pockets, and the front D-ring.
4. Safety clips for the ducting should be on, all doors are latched, light mast in its downright resting position.

5.4 Vertical Lifting by Crane:

1. The lifting eye lugs are made only for vertical lifting. DO NOT transport with a crane.
2. Use a four-point sling with the lifting eye lugs.
3. Attach a sling to all (4) lifting eye lugs or the unit may rotate freely. A freely spinning load poses a danger to equipment and people involved. If a lift requires a unit to rotate, be sure to use a tagline.
    a. Extra care must be used in environments with power lines near or overhead as the tagline will conduct electricity.
4. Lifts should be completed slowly and gradually.



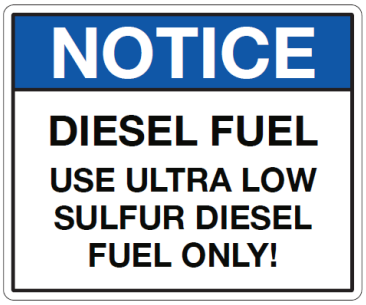
6. Pre-Operation

6.1 Daily Walk Around Inspection:

1. Look for conditions that could hinder performance or safety, such as oil, coolant, fuel leakage, blocked vents, loose or missing hardware and electrical connections.
2. Verify the V-belt is properly seated in the pulley grooves.
3. Coolant levels should be checked daily.
4. Check electrical battery, connectors, and ground points.
5. Check flexible rubber hoses for deterioration.
6. Check hoses are not twisted, crushed, or kinked.
7. Check there are no cracks or corrosion.

6.2 Refueling Safety:

1. Clean up any spilled fuel immediately.
2. Refill the fuel tank in a well-ventilated area.
3. Replace the fuel tank cap after refueling.
4. Do not smoke.
5. Do not refuel a hot or running engine.
6. Do not refuel the engine near sparks or open flames.



7. Operating

7.1 Unit Start Up:

1. Ensure heater is level and wheel chocks are placed under the wheels for stability.
2. Remove both port covers from the inlet/outlet chutes.
3. Turn the Master Battery Disconnect to the “On” position, the control panel will go through a booting sequence before taking you to the main screen.
4. If no alarms are present, press the “Stop/Start” button on the unit. After a glow plug countdown, the unit will start up.
    a. If it is cold outside the unit may go through a pre-warming phase before saying “Full Operation” at the bottom of the screen.

7.2 Unit Start Up – Winter:

1. In temperatures below freezing, diesel fuel will coagulate and cause problems with starting the machine. The engine will require preheating. Preheating can be achieved using the installed 120V block heater or by using a heater or other heat source indoors.
    a. In temperatures between 32°F (0°C) and -58°F (-50°C) the machine should be preheated using the block heater. Plug the block heater into a 120V outlet. Let the engine warm for 2.5 hours minimum.
    b. After preheating, the machine can be started normally.
2. In cold weather conditions please allow unit to charge for 2 to 3 minutes before pressing the “Stop/Start” button to allow the capacitor start system to charge. If the capacitors are not charged the unit may fail to start.

7.3 Heat Function:

1. Once the control panel says, “Full Operation”, users can turn on the main breaker and then press the "Heat On/Off" button.
    a. The default heat setpoint is 80°C or 176°F.
    b. Users can choose to set the temperature as high as 100°C or 212°F.
2. The BASECAMP will ramp up engine load to attempt to hit your desired output temperature. Keep in mind that the BASECAMP does a 100°C or 180°F temperature rise over ambient.
    a. If users want more specific temperature control in their space, then we recommend using a BASECAMP Wi-Fi Remote Probe.

7.4 Heater & Engine Shutdown:

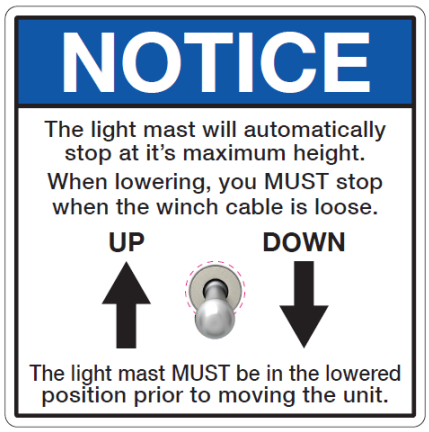
1. Do not use the Emergency Stop to turn off the machine.
2. Press the “Heat On/Off” button to disengage the heat.
3. Shut of all the breakers including the upper red main breaker.
4. Press “Stop/Start” button to stop the engine. Allow the engine to cool down, you will see a timer and message stating, “Cool Down”. Once the cooldown period has ended, see the next step.
5. Turn the Master Battery Switch to the “Off” position to shut down the control panel and avoid any unnecessary battery drain.

7.5 Generator Usage:

1. BASECAMP provides 27 kW of continuous power.
2. Once the BASECAMP is running and at full operation, users may turn on the Main Breaker to access the power distribution.
3. Simply match your required power with the outlet label on the BASECAMP, plug into the socket and turn on the corresponding breaker.
4. The unit will automatically and instantly divert power from heat generation (if in use) and provides electricity as necessary.
5. If the heat is engaged and the BASECAMP has not reached the desired setpoint, all remaining power is directed at the heating elements to ensure that unit remains under a full heat generation load.
    a. Having the BASECAMP lights turned on does not negatively affect the available power generation.
6. Utilizing all 27 kW of available power distribution will result in the heater operating at 60% of its normal peak capability. Air flow is not affected.
    a. Using air recirculation in this scenario is recommended.

7.6 Light Tower:

1. The BASECAMP is equipped with (3) 480-watt LED lights providing 192,000 Lumens.
2. The breaker switches for the lights can be turned on once the BASECAMP is running and the main breaker is turned to the on position.
3. On the main screen of the control panel users have further control with the ability to turn the lights to a Dusk/Dawn setting where lights will turn on approximately (2) hours before dusk and turn off (2) hours after dawn.
4. Prior to extending the light mast, first extend the side outriggers and securely extend all four jacks for stability.
5. The up/down switch is used to raise the light mast to the desired height or until the upper limit switch is tripped and the mast extends no further. Do not solely rely on the upper limit switch.
6. When lowering the light mast, you **must stop** when the winch cable is loose.
7. The light mast can be raised and lowered on the battery; however, Thermal Intelligence recommends having the unit running during mast operation to eliminate unnecessary battery drain.
8. The BASECAMP must be transported with the light mast in the fully lowered position.



7.7 Connect Ducting:

1. If using a coil style duct, bunch up as much of the duct as possible before securing the clamp. This will ensure an airtight seal and maximum air flow down the duct.
2. If using a soft cuff style duct, then simply secure using the included buckle and tighten prior to securing the ducting clamps.
3. It is recommended that ducting is secured prior to turning on the BASECAMP as it is easier to work while no air is flowing, however, if not practical hook up ducting while the unit is running.
4. The high static pressure of the BASECAMP means it can push air a long distance. To ensure that as much air gets to the destination as possible, always confirm that ducting connections are fully secure.
5. When using a ducting splitter, it is again recommended that connections are made while the BASECAMP is off. Always place the output duct inside the splitter as to not impede airflow.
6. Once the air is flowing, check to make sure the splitter is properly open to allow for equal air flow.
7. If hooking up more than one splitter and wanting to have equal air flow at all output points it is necessary to restrict air at the first and second outlets by closing the opening to less than 12".

7.8 Wi-Fi Remote Probe:

1. Plug the Remote Probe into any 120V outlet within 50' of BASECAMP. Place away from metal structures for better signal strength.
2. The control panel screen will update with the Remote Probe temperature & control once properly connected.
3. Select the desired Remote Probe temperature on the screen based on the heating requirements of the Remote Probe location.
4. Unplug the Remote Probe to return to output temperature setpoint options.

7.9 Beacon Light:

1. BASECAMP is equipped with a tri-colour beacon that indicates the operating status of the heater:
    a. The green light turns on whenever the engine is running.
    b. The yellow light turns on whenever there's a fault which doesn't shut down the machine. Example: Fuel level dips below 20% or Air Filter Restriction.
    c. The red light turns on if there is a critical error, which shuts the heater down.

8. Maintenance

8.1 Maintenance Overview:

1. Top level maintenance is provided in this section. For detailed engine maintenance procedures please refer to the Engine Owners Manual.

8.2 Maintenance Safety:

1. The following safety items are to protect the operator and heater during maintenance. Failure to meet or exceed any of the following safety procedures will result in damage to the heater, towing vehicle, other vehicles, property damage as well as serious injury or death.
    a. Place wheel chocks in front and behind the heater wheels to prevent accidental movement during maintenance.
    b. The area around the heater must be cleared of all unauthorized personnel.
    c. Wear approved protective clothing and safety glasses.
        i. No loose clothing or hanging jewelry. Long hair must be secured.

    d. Never weld or modify the heater unless approved by Thermal Intelligence.
    e. Do not replace any parts or tires except for parts from Thermal Intelligence or tires with the same rating as the original equipment and meet the specifications listed in Section 13.
    f. Always use the correct tools when performing repairs or routine maintenance.
        i. Using improper or inadequate tools can cause damage to the heater or injury to the operator.

8.3 Engine Service Intervals

1. Long Run Tank: 2,500 Hours
2. Non – Long Run Tank:
    a. Change oil after the initial 50 hours of operations and every 400 hours thereafter
    b. Refer to Engine Owners Manual

8.4 Maintenance Tasks:

8.4.1 Change Engine Oil:

1. Place container under drain port or connect hose to drain port leading to container.
2. Remove plug from oil drain.
3. Open drain valve to drain.
4. Drain the oil immediately to be sure all the oil and suspended contaminants are removed from the engine.
5. Close drain valve once completed.

8.4.2 Change Air Filters:

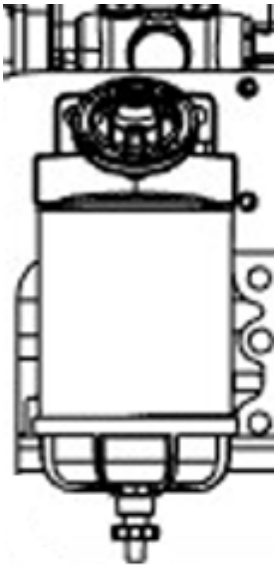
1. Replace air filters every 2,500 hours. Depending on running conditions filters may need to be changed earlier.
2. Lift the clamps to open the housing.
3. Replace inner and outer filters if heavily soiled.
    a. Write current engine hours on filters when replacing.
4. Replace the housing and reattach the clamps.

8.4.3 Change Fuel Filter:

1. Remove the spin-on fuel filter with a filter wrench, collect escaping fuel.
2. Install:
    a. Do not pre-fill. The fuel filter can result in debris entering the fuel system and damaging fuel system components. Lubricate the O-ring seal with a small amount of diesel.
    b. Install the filter on the filter head.
        i. Write current engine hours on filter when replacing
    c. Tighten the filter until the gasket contacts the filter head surface.
    d. Tighten the fuel filter an additional ¾ turn after contact, or consult the filter manufacturer instructions.
    e. Prime fuel system after filter installation.
    f. WARNING:
        i. The fuel pump high-pressure fuel lines and fuel rail contain very high-pressure fuel.
        ii. Never loosen any fittings while the engine is running. Personal injury and property damage can result.
        iii. Operate the engine and check for leaks.

8.4.4 Fuel/Water Separator:

1. Draining Water (regularly check for water in base container and drain as necessary):
    a. Shut down engine.
    b. Place suitable container underneath.
    c. Loosen drain plug.
    d. Drain until pure fuel runs out.
    e. Tighten drain plug.



2. Changing the Pre-filter insert:
    a. Shut down engine.
    b. Place suitable container underneath.
    c. Loosen drain plug and drain liquid.
    d. Disassemble filter insert.
    e. Clean any dirt off the sealing surfaces.
    f. Wet the sealing surfaces of the filter cartridge with fuel and screw back on to the filter head, clockwise.
    g. Tighten drain plug.
    h. Prime the fuel system. See below.

8.4.5 Priming the BASECAMP:

1. The filter primer pump is located above the fuel water separator on the Control Panel side of the BASECAMP.
2. First, press the Primer pump several times until it becomes too hard to press in. Cycle the BASECAMP power on and off using the main battery disconnect then press the start button. If the unit still doesn't start, then re-press the primer pump until it is hard then continue to press the pump button while the starter is turning over.
3. If BASECAMP still doesn't start you may have an air-locked fuel line or a fuel leak. If no leaks present, using a 10mm wrench open the fuel line bleed screw located on the fuel filter (not on the water separator) and see if any diesel fuel comes out.
    a. If no fuel comes out, then press the primer pump until you see diesel come out of the bleed screw (be sure to have a soaker pad underneath the screw to catch any diesel). Once diesel comes out of the screw, tighten it back up and press the primer pump until it becomes hard.
4. Try re-starting the engine. If there was air in the lines this process may need to be completed several times. If the BASECAMP still does not start and there are no other codes on the control panel, contact Thermal Intelligence.

8.4.6 Oil Filter:

1. Remove:
    a. Clean the area around the oil filter head.
    b. Use an oil filter wrench to remove the filter.
    c. Clean the gasket surface of the filter head.
        i. The O-ring can stick on the filter head. Be sure it is removed before installing the new filter.
2. Install:
    a. Use clean oil to coat the gasket surface of the filter.
    b. Apply a light film of lubricating oil to the gasket sealing surface before installing the filter.
        i. Be careful that no debris is poured into the filter. If using an oil supply with a metallic or plastic seal under the cap, be careful to peel the seal back. Punching the seal with a knife or sharp object can create debris in the oil container.
    c. Mechanical overtightening of the filter can distort the threads or damage the filter sealing element seal. Install the filter on the oil filter head. Tighten the filter until the gasket contacts the filter head surface. Tighten ¾ turn after the gasket contacts the filter head.

8.4.7 Adding Coolant & Coolant Check:

1. If coolant level is below the filler neck, coolant must be added.
    a. Verify engine is stopped and cooled.
    b. Remove radiator cap.
    c. Fill radiator slowly with coolant until it comes up to the filler neck.
    d. Coolant can be added inside the enclosure or from the roof access panel.
    e. Operate engine approximately five minutes to bleed the air in the coolant circuit.
    f. Coolant level will drop.
    g. Stop the engine and once cooled, there should be approximately 1” of coolant in the reserve tank.

8.4.9 Engine Oil Check:

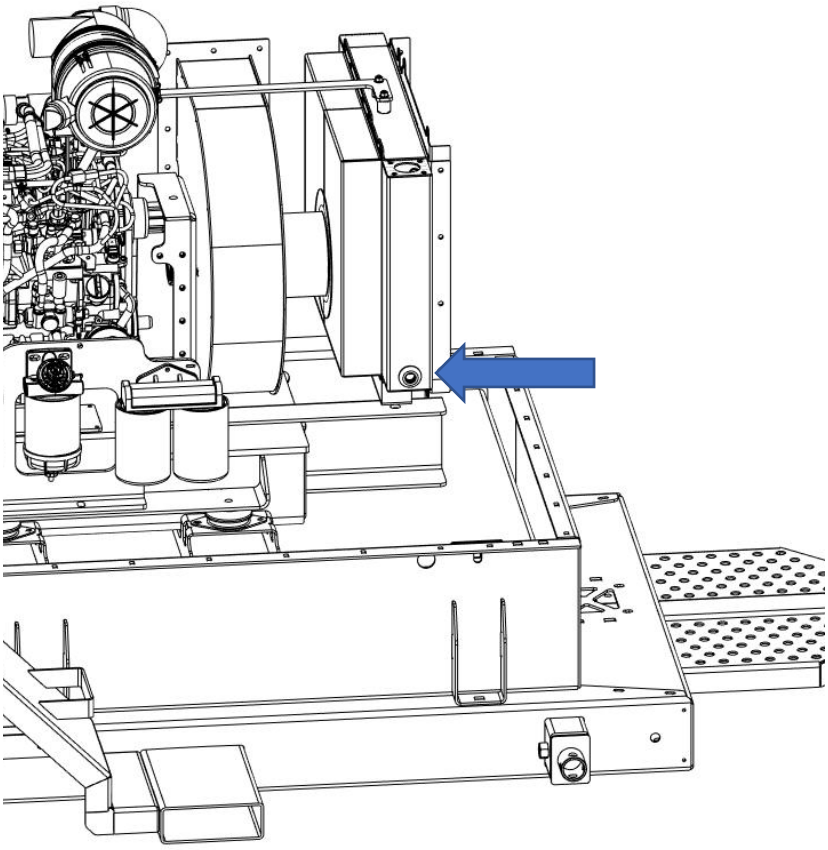
1. If engine was running, wait ten minutes before proceeding.
2. Remove dipstick and wipe it dry with a lint free and clean cloth.
3. Insert the clean dipstick. Verify the dipstick is fully seated.
4. Remove the dipstick and look at the oil level on both sides. The lower of the two readings is the correct oil level.
5. Add oil (if necessary) to adjust the level. After adding or changing the oil, run the engine for one minute before checking the oil level.

8.4.10 Battery Check:

1. Battery maintenance checklist should be performed monthly. Always wear approved eye protection when working with batteries and wash hands after handling.
2. Inspect battery posts and cables for tightness and corrosion.
3. Tighten and clean cables and posts as necessary. If required, use battery contact cleaner.
4. Coat the battery posts with dialectic grease, after tightening and cleaning.

8.4.11 Exhaust Heat Exchanger Check and Drain:

1. BASECAMP has a wet stack prevention program built into the unit; it is possible for the exhaust heat exchanger to see an excess build up of fluids.
2. It is recommended that the 3/8" hex inspection bolt is removed at least once a year and the bottom of the exchanger is inspected for fluids.
3. The BASECAMP should be off when the bolt is removed. If the exchanger is cool to the touch, users may insert a finger into the exchanger to check for fluid.
    a. It is normal to feel small amounts of condensation when inserting your finger into the exchanger.
4. If the fluid level is below the drain, that is considered acceptable and will not damage the unit.
5. If the fluid level is above the drain, allow the fluid to drain then re-insert the plug for normal operation. It is recommended in this case that the BASECAMP is run under full load for two hours to clear excess condensation.



8.4.12 Blower Belt Replacement (Poly Chain Belt):

1. For ease of access remove the intercooler to manifold pipe (will be either 10mm or 8mm).
2. Remove the (7) bolts on the side belt guard of the blower, use a 9/16” wrench.
3. Then remove the (2) vibration dampener bolts using a 13MM wrench.
4. Slightly loosen (**do not remove**) the (4) blower fan bearing bolts using a 11/16" wrench.
5. Loosen the tensioner bolt by loosening the 1/2” bolt located on the top of the blower bracket until the belt is loose enough to remove (prybar may be needed to assist). If it doesn't move freely with a prybar, further loosen the tensioner bolt.
6. Remove the belt, ensuring that you do not have to roll it or kink it to take it off as this will damage your new replacement belt during the install.
7. Install replacement belt. It should not need to be forced on.
8. Put unit back together in reverse order.

8.4.13 Blower Belt Tension (Poly Chain Belt):

1. Test belt tension and record value for future records.
2. Loosen 7/16 Nyloc nuts on bearing.
3. Loosen 1/2 lock nut on tensioner.
4. Adjust the 1/2" tensioner bolt till adequate tension is applied to belt.
5. When retightening bearing 7/16 Ny lock nuts tension will increase significantly.
    a. Final running tension should be within:
        i. New belt: 90 - 100 lb.
        ii. Used belt reinstalled: 75 lb.
            1. Tensioner should sit straight when checking belt tension.

8.4.14 Blower Belt Replacement (V-Belt):

1. For ease of access remove the intercooler to manifold pipe (will be either 10mm or 8mm).
2. Remove the (12) bolts on the side belt guard of the blower, use a 9/16” wrench.
3. Then remove the (1) vibration dampener bolts using a 13MM wrench.
4. Remove the belt guard.
5. Slightly loosen (**do not remove**) the (4) blower fan bearing bolts using a 11/16" wrench
6. Loosen the tensioner bolt by loosening the 1/2” bolt located on the top of the blower bracket until the belt is loose enough to remove (prybar may be needed to assist). If it doesn't move freely with a prybar, further loosen the tensioner bolt.
7. Place a crescent wrench on the tensioner arm and apply pressure to remove tension from the belt.
8. While holding the crescent wrench, remove the belt, ensuring that you do not have to roll it or kink it to take it off as this will damage your new replacement belt during the install.
9. Install replacement belt. It should not need to be forced on.
10. Put unit back together in reverse order.

8.4.15 Blower Belt Tension (V-Belt):

1. Test belt tension and record value for future records.
2. Loosen 7/16 Nyloc nuts on the blower bearing.
3. Loosen 1/2 lock nut on tensioner.
4. Use a crescent wrench on the tensioner arm to remove tension, adjust the 1/2" tensioner bolt till adequate tension is applied to belt.
5. When retightening bearing 7/16 Nyloc nuts, tension will increase significantly.
    a. Final running tension (without the tensioner touching the belt) should be within:
        i. New belt: 90 - 100 lb.
        ii. Used belt reinstalled: 75 lb.

8.4.16 Light Tower Maintenance:

1. Inspect mast/winch cables regularly.
2. Lubricate cables after every wash with a dry wire rope lubricant.

8.4.17 Light Tower Lens Adjustment:

1. Utilizing a 13mm wrench users may adjust the individual light lenses to the desired angle.
2. For adjusting the entire bracket assembly up or down you will require a 16mm (outside) and 17mm (inside) to loosen the bracket and adjust the angle.

9. Seasonal

9.1 Off Season Maintenance:

1. Unplug the block heater from the 110-volt plug. This is done so that the unit can still be plugged in periodically and the on-board battery tender can charge the battery without the block heater running. Plug the block heater back in before the start of next season.
2. Remove the containment drain plug on the rear of the unit to drain any excess water, or potential diesel from over filling. This should be done at least once a year.
3. Check exhaust heat exchanger as noted in Section 8.4.11.
4. Check Coolant and add if necessary. In a fully cooled condition, there should be no more than 1" of coolant in the expansion tank.
5. Ensure ducting caps are on to avoid any debris/rodents entering the unit.
6. Check tension on the V-belt, tighten if necessary.

9.2 Seasonal Checklist:

1. Check oil.
2. Test control panel for proper operation.
3. Check radiator for corrosion and damage.
4. Check engine hoses and exhaust clamps; tighten or replace as needed.
5. Check wiring harnesses for damage; replace as needed.
6. Check battery; replace as a set as needed.
    a. Disconnect for storage; connect for operation.
7. Check engine fan belt; replace if necessary.
8. Check engine coolant; replace if necessary.
9. Check air filter; replace if necessary.
10. Check fuel filter; replace if necessary.
11. Check tire pressure. Inflate to 80 psi.
12. Inspect for loose bolts and nuts.
13. Inspect safety guards and shields.

10. Recommended Filter & Fluids

10.1 Filters:

1. Air Filter - Inner
    a. Donaldson - Item #P829332
2. Air Filter - Outer
    a. Donaldson - Item #P827653
3. Engine Oil Filter
    a. Kubota - Item #HH164-32430
4. Engine Oil Filters (LRT) x 2
    a. Kubota - Part #HH160-32430
5. Fuel Filter - Primary
    a. Kubota - Item #HH1J0-43172
6. Fuel Filter/Water Separator
    a. Racor - Item #R60T

10.2 Fluids:

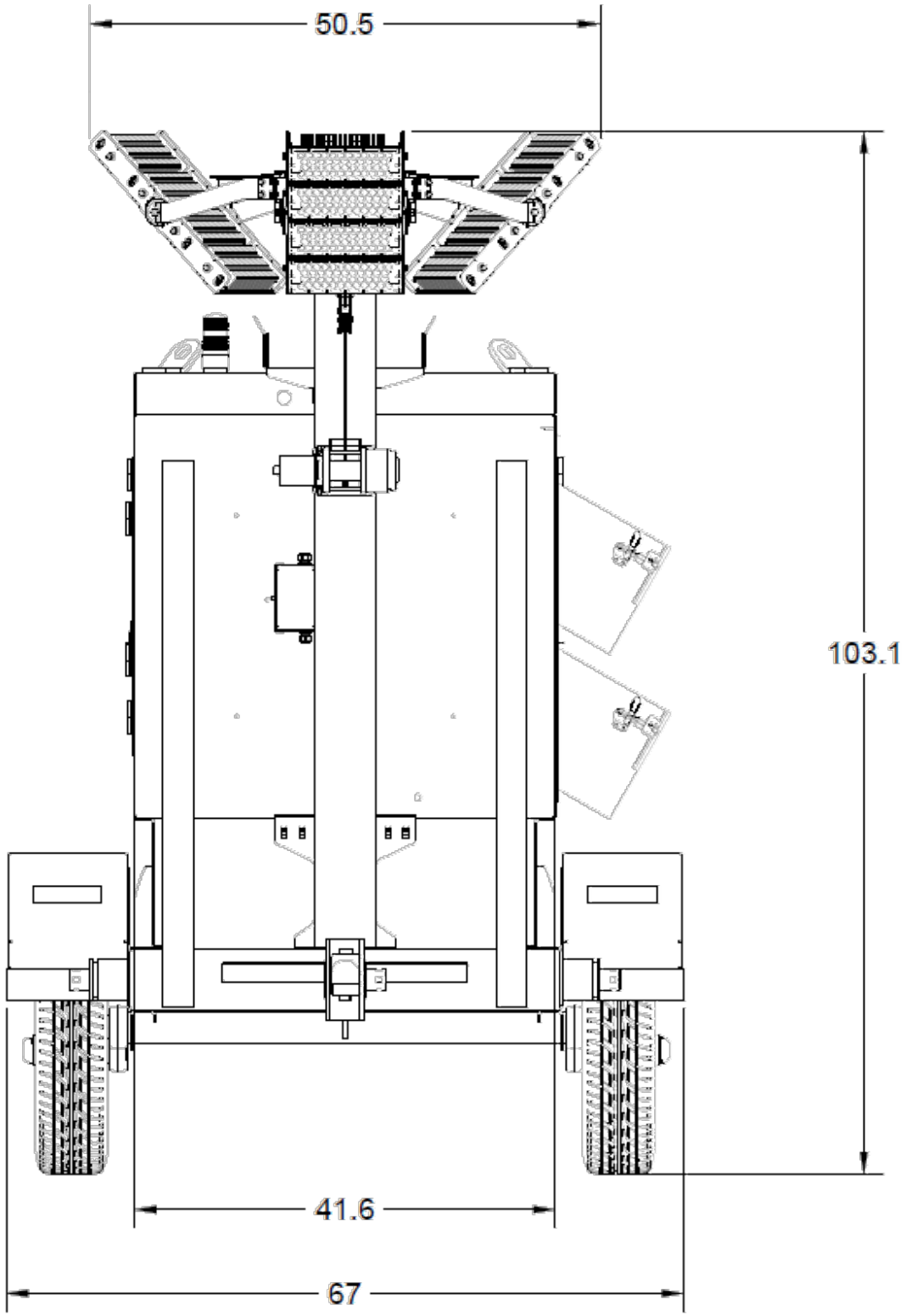
1. Engine Oil
    a. Refer to the Kubota Engine Manual for precise oil specifications.
    b. BASECAMP is shipped with CJ4 compliant 5W-30 conventional diesel engine oil.
2. Engine Coolant
    a. Refer to the Kubota Engine Manual for precise coolant specifications.
    b. BASECAMP is shipped with Cool-Gard Coolant - Item #TY26576 diesel engine coolant.

11. Technical Specifications

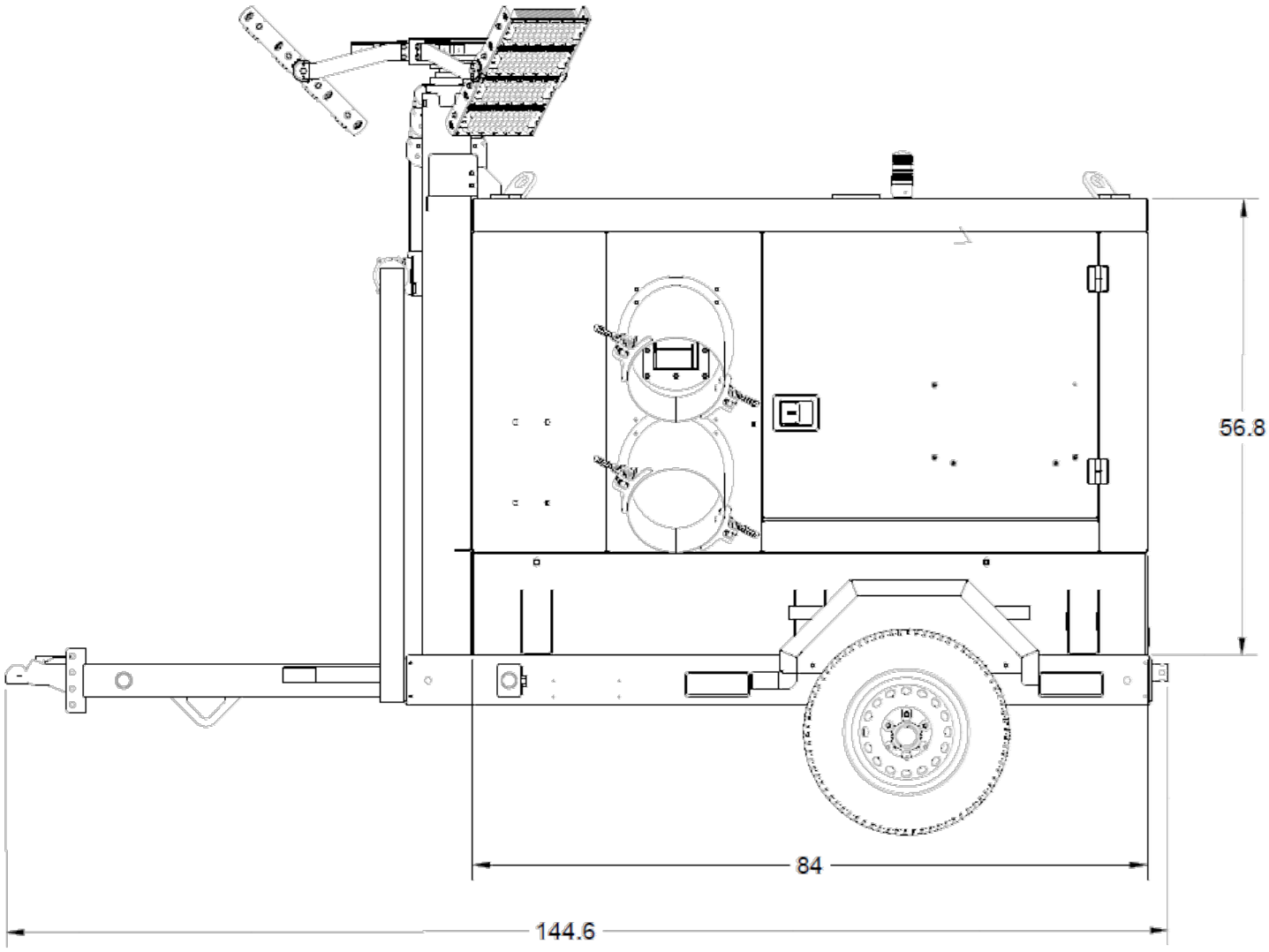
TECHNICAL SPECIFICATIONS	BASECAMP
Fuel Type	Diesel
Dimensions (Cabinet)	Ft-In: 3'5" x 7' x 5'
Dimensions (Wheelbase)	Ft-In: 5'8"
Dry Weight	Kg: 1,590-2,045 Lb: 3,500-4,500
Engine	Kubota 2.4 Litre Electronic Tier 4 Final
Fuel Capacity	Gallons: 119 / Litres: 450
Minimum Run Time	48 Hours
Power Generation	27KW of continuous power
Power Plugs	(3) Twist Locks – 30 Amp (3) GFI – 20 Amp 120V
Light Output	192,000 Lumens 5k colour
Temp Rise	100°C/180°F
Static Pressure	10 INCH WC
BTU Equivalent	700,000
SCFM	3,250

12. Dimensions

12.1 Front View:



12.2 Side View:



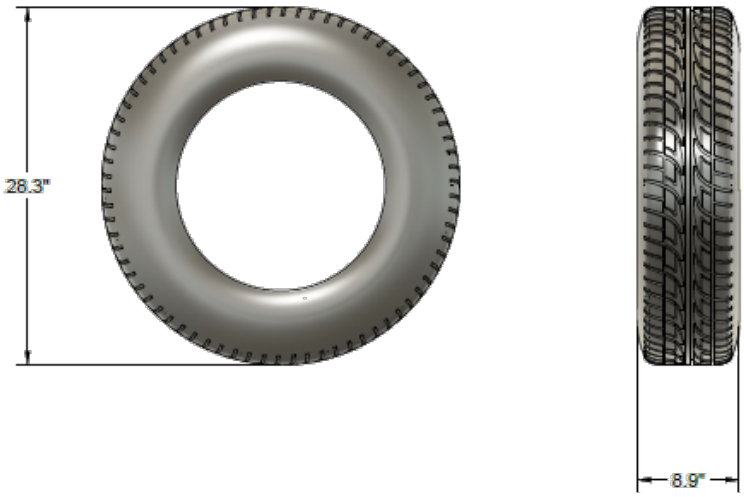
13. Tire & Rim Specifications

13.1 Rims:

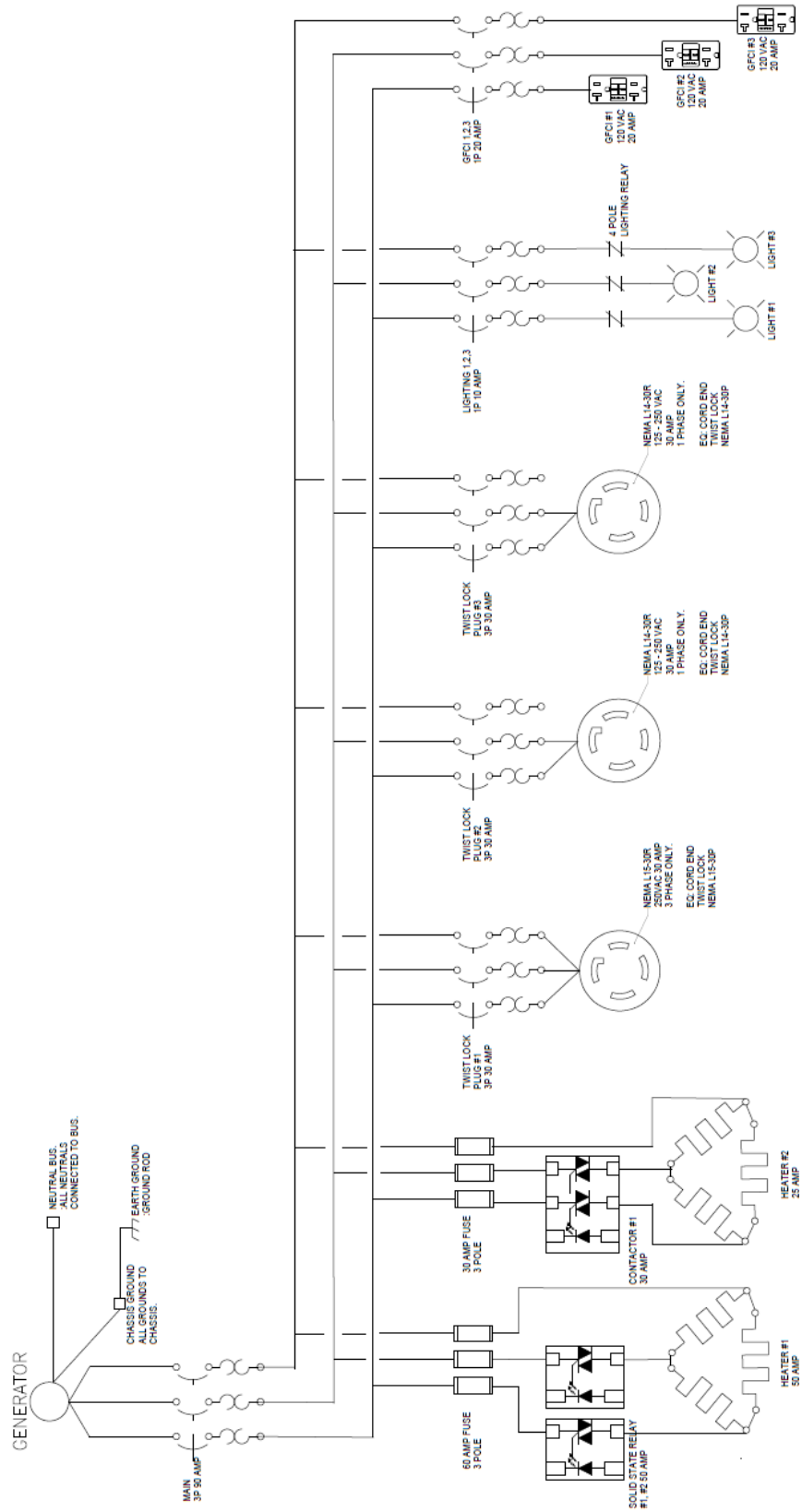
1. Size: 15"x6"
2. Bolt Pattern: 5x4.5"
3. Maximum Load Rating: 2,830 lbs

13.2 Tires:

1. Size: ST 225/75 R15 Tubeless
2. Load Rating "E" 10 Ply
3. Max Load: 2,830 Lbs at 80 PSI
4. Tread: 2 Steel + 2 Poly + 1 Nylon
5. Sidewall: 2 Poly



14. Power & Electrical Schematic



Thermal Intelligence

#100, 15330 123 Avenue NW
Edmonton, Alberta T5V 1K8
1 (855) 554 4344

All information and specification in this Operator Manual were accurate at the time of printing.

Thermal Intelligence is committed to continuous product development, and we reserve the right to revise this document at any time, without written notice.

Current versions of all manuals & support documents will be available online:

https://thermalintelligence.com/support-content