



RAY-TECH INFRARED

Infrared Reclaimers

User Manual

The following manual will cover Ray-Tech Infrared's extensive line of truck mounted and trailer mounted infrared reclaimers.

Our reclaimers operate on propane fuel with electronic ignition. They are designed as air jacketed systems, meaning the space between the hopper and insulated outer walls is filled with air which is heated and then transfers heat through the hopper into the asphalt.

All of our reclaimer models operate with the same type of components and therefore operate with the same heating results. New material hot from the asphalt plant will be held at your desired workable temperature for up to 48 hours. Cold material loaded into the box will be reclaimed to your desired workable temperature in 12 to 14 hours.

If you have questions about your machine or troubleshooting, please contact us at the numbers or email below.

Ray-Tech Infrared Factory Assistance

Parts: 603-826-3416

Service: 603-826-0391

parts@raytechinfrared.com

Parts - Monday through Friday / 8AM - Noon EST

Service - Monday through Friday / 6AM - 2:30PM EST



COMPONENTS

This section will define the terms we use for the different components of all of our reclaimer models. Some models will include more or less of each part.

Hopper



The hopper is the inner portion that holds the asphalt. The walls are usually slightly sloped inwards to steer asphalt towards the discharge doors. There are cutter bars in the top of the hopper to help with strength and breaking up large chunks of asphalt.

Discharge Doors



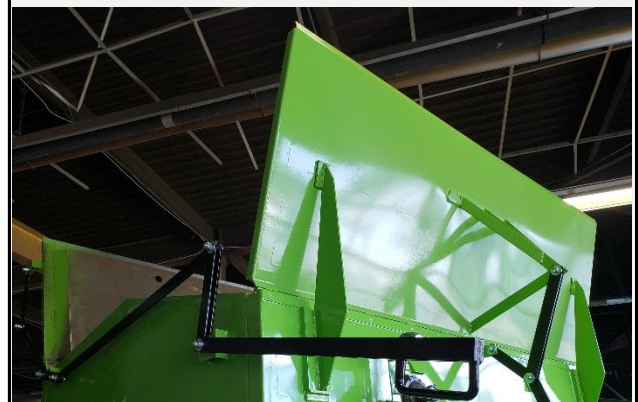
The discharge doors (also known as shovel doors) are the doors used to remove asphalt from the box. They can be either manually or hydraulically operated depending on the model and options. They are insulated to prevent heat loss.

Burner Compartment



The burner compartment is located below the hopper and houses the burners and fuel line piping. When the burners ignite, the heat works its way upwards and through the air channels in between the hopper and the insulated outer walls to heat the material.

Top Loading Doors



The top loading doors are used to load the box at the asphalt plant or from your stock asphalt pile. They can be either manually or hydraulically operated depending on the model and options. They are insulated to prevent heat loss.



COMPONENTS

Burner



The burners come in different sizes (rated by BTU) depending on the model. Our standard burners come with metal fiber matting but you can order them with ceramic tiles as well. Each burner is fitted with an electronic spark plug for easy, worry-free ignition.

Electronic Control Module (ECM)



The ECM controls the ignition of the burners. It reads signals from the thermostat and/or the timer to determine when it should start the burners up or shut them down.

Thermostat



The thermostat senses the temperature during heating. The copper wire extends into the box in a specific manner that allows the thermostat to pick up on temperatures in key places. This then ties into the burner wiring to control how long the burners stay lit.

Timer

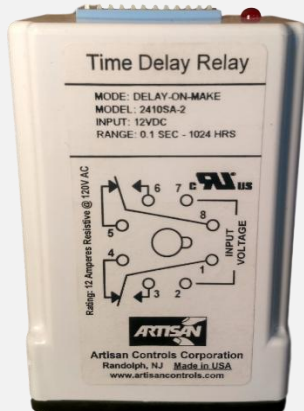


When reclaiming, the timer takes initial control of the burners. It tells the burners to run on and off at preset intervals until the thermostat eventually takes over.



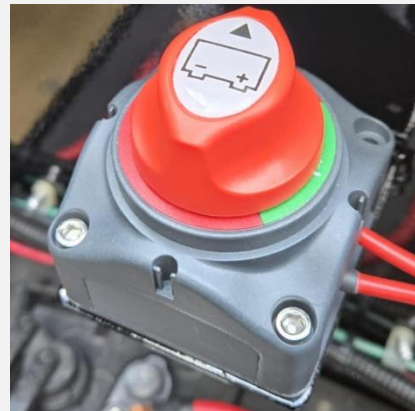
COMPONENTS

Time Delay System (TDS - Optional)



TDS is an option that can be selected when ordering. It consists of an additional timer designed to delay the startup process of the burners. For example, it can be set to start the burner ignition process on a Sunday night to have the asphalt ready for Monday morning.

Shut Off Switch



Most of our builds include a master shut off switch or two. They allow for all power to be turned off in one location.

Gas Valve



Each burner has a gas valve connected to its gas pipe. This valve stays in the closed position to stop the flow of propane to the burner. When the reclaimer switch is turned on, the ECM tells the gas valve to open and begin feeding fuel to the burner for ignition.

Two Stage Regulator



Tanks are hooked into the regulator which then feeds the blowers motors. These are preset for optimal performance.



BASIC OPERATION

Ray-Tech reclaimers are designed for very easy operation with the flip of a switch. Below is a basic step-by-step walkthrough of any Ray-Tech reclaimer:

1) PROPANE

When you get your reclaimer, the first step is to get your propane tanks filled. Most new tanks are purged at the factory, but you should let your propane company know that they are brand new just in case they need to be purged before filling. Once filled, screw in the threaded POL fittings on the gas hoses and turn the tanks on very slowly. The POL fittings have a little ball inside that prevents fast gas leaks, so turning the tanks on quickly may push that ball to plug the fitting temporarily. Finally, check for leaks by spraying a mixture of soapy water on the connections to check for bubbles.

2) ASPHALT

Filling the box is as simple as opening your top loading doors and driving under the asphalt plant's chute. You can also load the box with chunks of cold material to be reclaimed if you would like. Just allow yourself 12-14 hours for it to completely reheat. Some of our customers spray the insides of the hopper with an oil or even diesel to prevent sticking. While this isn't really necessary, we have been told that it helps in cleaning at the end of the day. Just be sure not to use too much as excess diesel can damage the asphalt binder.

3) HEATING

Turn on the "reclaim" toggle switch. You will hear a momentary ticking as the sparkers come on. The burners will then ignite and begin to glow. On initial startup or after propane refilling or extended downtime, you may find that the burners don't immediately ignite and you may need to shut off the toggle and turn it back on. This is because you may have air in the lines that will purge itself fairly quickly. Once lit, your box is now in the process of heating!

Notes on Heating: When you first start heating, the thermostat will immediately begin to read the temperature. Once it reaches its preset temperature, it will assume control of the burners. Until that point, the timer will tell the burners to run for 9 minutes and then shut off for 3 minutes repeatedly.



BASIC OPERATION

4) USING MATERIAL

The burners will keep operating all day whether sitting on a jobsite or driving down the road. They are set to maintain a steady and even temperature throughout the box. As you remove asphalt from the hopper, some heat will obviously escape through the discharge doors, but the thermostat will not let the asphalt cool down.

5) END OF DAY CLEANUP

When you're done with the box for the day. You have two options:

1) Empty the box completely. You can shovel out any leftover asphalt and either dispose of it or stockpile it in chunks that you can handle later and that could fit into the hopper later to be reclaimed. Take care not to damage the inside of the hopper in any way. Be extra careful not to use sharp tools that may puncture or dent the hopper as that creates a sticking point for asphalt later on.

2) Leave material in box for later use. You can leave hot material inside the box with the burners running overnight to keep it warm for the next day. We recommend not doing this more than one night without cleaning the box out entirely before refilling though, as the bottom layer will begin to dry out. You can also leave the material inside the box overnight with the burners off if you are not planning on using it the next day. When you are ready to use it again, you will need to allow it 12 hours to reclaim.

Common Tools

The most helpful tools to have on the jobsite with a reclaimer are as follows:

- 1) Push Broom - To clean out holes to be filled.
- 2) Square Shovel - To remove asphalt from hopper.
- 3) Hand Tamper - For precision compaction.
- 4) Roller / Plate Compactor - For general compaction.
- 5) Putty Knife / Scraper - To clean asphalt off tools.
- 6) Wheelbarrow - To move asphalt from reclaimer to patch.



General Maintenance Schedule

The table below gives the recommended frequency of common maintenance checks that you should carry out on your machine:

Component	Action	Schedule
Vents / Louvers	Clean Out	Every Operating Day
Battery	Charge	Every Night Before Use
Gas Connections	Check / Tighten	Every Operating Day
Top Door Hinge	Clean / Oil	Every Time Box is Filled
Burners	Check Matting / Tiles	Weekly
Burners	Check for Orifice Obstructions	Weekly
Burners	Test Burner Operation	Weekly
Battery	Charge	Monthly (if parked for extended period)
Hydraulics *	Check Connections	Weekly
Hydraulics *	Check Fluid	Weekly

** If applicable to your machine*



Troubleshooting

Every reclaimer that leaves Ray-Tech is preset and should need no adjustment to any of the components. Over time however, you may need to troubleshoot some operation issues.

Below are some steps you should take prior to contacting your dealer or Ray-Tech:

Burners Do Not Ignite

- Check battery to make sure it has a minimum of 12 volts. If below 12 volts, recharge or replace as necessary.
- Check gas tank to make sure there is fuel and ensure valve is completely open.
 - Check fuse in control box to make sure it is still good.
 - Turn the control box switch to "on" and the red light should come on.
- Look inside the burner compartment door to make sure the ignitors are sparking. If they are, listen for a faint click about 6 seconds after the switch is turned on, which is the gas valve opening. If the valve opens but the burner does not light, there may be air in the lines. Turn off the switch for 10 seconds and try again.

Burner should light on the second or third try.
- If ignitor does not spark, the gap on the electrode needs to be checked to make sure it is not touching the matting or too far away from the burner face. There should be a 1/16" to 1/8" space between the electrode and the burner face. Please note that when heating, the electrodes may bend slightly, so keep that in mind while checking burner operation. If there is still no spark, check all wiring to the ECM and ignitors for 12 volts at the red wire hooked to the ECM. If there is no issue there, you probably need to replace the ECM.

Burners Ignite But Do Not Stay Lit

- If more than one burner lights but does not stay lit, you likely have a grounding issue with the ECMs. Check that there is a good connection of the yellow wire running from the ECM to the chassis.
- High humidity can sometimes cause ceramic faced burners to collect moisture and light then go out. Using a hair dryer (not a heat gun) can help to start it.
- If you have damaged ceramic tiles or loose fiberfrax, you may hear a popping or cracking noise indicating the burner is not operating correctly. Roaring sounds may also be heard as propane will sometimes light within the burner in these cases.

Repair or replace the face material, fiberfrax or burner ASAP.
- Use a handheld torch to heat the end of the flame sensor on the burner and then turn the switch on. If the burner now stays lit, the flame sensor is not receiving enough heat from the burner. If it does not stay lit, the sensor is faulty and the ignitor needs to be replaced.
 - If burners light but do not glow strongly, the gas valve may not be opening completely. You may need to clean or replace the valve.



Troubleshooting

Material Is Cold After Reclaiming

- Check all vents and louvers and make sure they are clean. They must be clear at all time or heat will not flow correctly. If they are clear and there is still no heat, check the burners for proper operation.
- Leaving even a thin layer of asphalt in the hopper before filling up with a new load of material can create an insulating effect that will prevent proper heating. Make sure when you finish with a load of asphalt, you completely clean out the box before you start again.

Optional: TDS Operation

The Time Delay System (TDS) option allows you to preset the time that the reclaimer will turn on when you're not around. For example, you can preset it so that when you are done with work on Friday you just flip the TDS switch and the box won't start heating until Sunday night. That allows the asphalt to be ready for work on Monday morning without you having to go to the box to turn it on manually. Below is a brief explanation of the TDS operation instructions:

- 1) Set the TDS Timer to the desired hours to wait before starting the reclaimer.
- 2) Switch the TDS toggle switch to the "on" position.
- 3) Switch all the reclaim toggle switches to the "on" position.
At this time, the TDS indicator light will come on.
- 4) When the desired time comes, the reclaimer will automatically light and the red reclaim indicator lights will come on.
After reclaiming is finished, you can switch the TDS toggle to the "off" position and leave the reclaim switches in the "on" position. The reclaimer will now continue to keep the asphalt at the desired working temperature.
- 5)



Recommended Spare Parts

We highly recommend stocking some common replacement parts, even if you shouldn't need them for a long time. In the case that something may fail on your machine, it is best to have as little downtime as possible! Below is a table showing the recommended parts and quantity of each that you should keep on hand for each model reclaimer:

	RC4000 / RC6000 RC8000 / RC2-T / RC3-T RC4-T	2C / 3C / 4C / TMV2 TMV3 / TMV4 / TMV6	RC6-T / RC8-T / RC10-T	RC12-T / RC15-T
Timer	1	1	1	1
12V Gas Valve	1	1	2	2
12V ECM	1	2	2	2
Ignitor	1	2	2	2
Ignitor Wire	1	1	2	2

This is a bare minimum recommended list of what you should have on hand to prevent costly downtime. If you would like to stock more emergency parts, please reach out and we can go over what other components might be helpful to have around.



Safety Precautions

We include this section to point out situations that can lead to accidents before, during or after the use of your equipment. The following steps should be followed:

- 1) Become familiar with your machine. Identify all stickers and signage and contact us for replacements if needed. Know where all controls, valves and switches are and understand what each one does before operation of your machine.
- 2) Perform daily checks of your machine. Make sure gas and hydraulic fittings are tight and leak free. A visual check should ensure valves, switches and handles are clear of obstructions or slipping hazards. Remove any loose items that may fall off during transport. Clear any leaks or grease of any type that could cause an accident.
- 3) Avoid fire hazards. Allow your machine to cool down some before changing or refilling fuel tanks. Check for potential fire or spark sources during refilling. Keep flames and sparks away from batteries as well as they can produce a flammable gas. Remove trash, oily rags or other flammable materials from the machine before use.
- 4) Keep personal safety items on hand. We recommend a 10+ lb type ABC or CO2 fire extinguisher for all our machines. A commercial grade first aid kit with burn packs is also a must.
- 5) Dress appropriately. We recommend long pants, long sleeve shirts, heat resistant gloves, hard soled work boots, eye protection and safety vests during operation. If this is not possible, just be smart and be aware of any hazard points on the machine or at your worksite.

Burns

In the event of an asphalt burn, cool the affected area immediately. Submerge area if possible in cool or cold water. We recommend visiting a physician or hospital soon afterwards as you may require assistance in removing asphalt from the burn. For serious burns, visit the nearest hospital immediately. **DO NOT** attempt to remove asphalt with solvent products. Natural separation will occur in 48 - 72 hours if not removed by a physician. If immediate removal is necessary, soak bandage in mineral oil and place over area for 2 - 3 hours.

Avoid equipment damage. When working on your machine, contact your dealer or Ray-Tech with any questions about voiding parts warranties or damaging your machine. Be especially careful when working with your batteries, blower motors or blower motor controls. **When welding, disconnect all wires from battery terminals or batteries may be destroyed or could explode. When working on blower motors, DO NOT open the motor cover itself. That will void warranty automatically - no exceptions.**

REMEMBER

Ray-Tech cannot control the safe use of your machine. All of our equipment is manufactured with operator safety in mind and we incorporate safety precautions into every component!



Limited Lifetime Equipment Warranty

This warranty covers workmanship and defects of Ray-Tech Infrared manufactured products to the original owner. Owner must register equipment with Ray-Tech Infrared within 30 days of purchase. Warranty may not be transferred. This warranty excludes normal wear and tear and associated components. Failure to follow prescribed General Maintenance Schedule will void warranty.

We warrant to the original owner that all Ray-Tech manufactured components will be free from defects in workmanship, under normal use and maintenance, for the working lifetime of the equipment.

Notwithstanding the preceding paragraphs, some components carry individual warranty periods

- | | |
|---|-------------------|
| • Ray-Tech manufactured heating chambers | 5 Years |
| • Ray-Tech manufactured reclaimer boxes (warranted for burnout) | 10 Years |
| • Ray-Tech manufactured converters (in heating chamber) | 5 Years |
| • Ray-Tech manufactured inconel grids | 6 Months |
| • Blower motors and blower motor controls | 6 Months |
| • Electrical components | Limited - 30 Days |

** Pending return to Ray-Tech Infrared and evaluation by original manufacturer.*

Excluded from this warranty are all products, parts and components not manufactured by Ray-Tech Infrared as well as all normal wear and tear items and any labor costs incurred. This includes but is not limited to:

Gearmotors / Tires / Motors / Wiring / Wiring Components / Burners / Matting / Ceramic Tiles / Fiberfrax

During this warranty period all warranty claims will be approved or disapproved at Ray-Tech Infrared's sole discretion. Ray-Tech Infrared's obligation under this warranty is limited to the above and does not apply to situations of improper installation, misuse, maladjustment, abnormal operating conditions or lack of routine maintenance. Components damaged by misuse, negligence or accidents are excluded from this warranty.

All other warranties expressed, implied or statutory are hereby excluded and disclaimed to the extent that they exceed the warranties granted herein. In no event shall Ray-Tech Infrared be liable for consequential or incidental damages. No agreement extending this warranty shall be binding upon Ray-Tech Infrared unless in writing and signed by Ray-Tech Infrared's duly authorized officers.

This warranty applies to equipment sold to customers located in North America only.

This Warranty applies to all equipment purchased on or after October 1, 2025 or until a new warranty is created.



RAY-TECH INFRARED

PRODUCT WARRANTY REGISTRATION

NAME

COMPANY NAME

PHONE

EMAIL

CITY/STATE/ZIP

MACHINE MODEL

SERIAL OR VIN

DATE OF PURCHASE

WHERE YOU PURCHASED IT

Fill out entire form and return to Ray-Tech Infrared within 30 Days of purchase. Form can be emailed to the address below:

EMAIL

sales@raytechinfrared.com