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Repair/Troubleshooting Guide on Burn Units

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The following conditions have been identified as normal wear items which either need replacement or periodic attention/repair.

Note: Modifications have been designed into newer Units which addresses and fixes some problems associated with earlier production Units. Please call Alaskan Stoves (Tok Welding) for any clarification needed.

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1. Out of Balance Condition

A properly balanced Unit is important for safe, easy, and normal operation. All Units should be in balance from the factory when it arrives at your site. After positioning your Unit at your site ensure that:

- ✗ The skid Unit dolly is removed, and that the skid platform, (and Trailer platform on the Trailer Unit), is level, side to side and front to back.
- ✗ That the smokestack and handrails, (Trailer Unit), are bolted on.
- ✗ The Unit will tip up with a moderate lifting pressure. 30 to 50 pounds should be an appropriate lifting/tipping weight for both the Skid and Trailer Units.

At this point if the Unit is either too heavy to lift or too light of a lifting/tipping weight, Alaskan Stoves should be notified so that the problem can be determined and fixed.



Once in Balance a Unit should stay in Balance for its entire life. The ash residue load will have a minimal effect on balance. The nature and design of the hinge/tipping feature is such that the ash load will be evenly distributed within the burn box, thus having no effect on tipping weight.

Repairs and modifications to a Unit, may have a dramatic effect on tipping/lifting weight. For instance, if new metal is welded onto the front doors to repair burn through spots it will create a

heavier lift weight. Even small repairs or modifications can create large changes due to the ‘Moment Arm’ distance from the balance point hinge.

Repairing a HEAVY lifting/tipping weight

To correct/repair a too heavy lifting/tipping weight in the front of the Unit, a corresponding weight can be added, (or welded), onto the rear of the burn box barrel itself.

For instance, let us say, because a repair was made to the front doors by adding heavier sheet metal to the door faces which added 15 pounds weight to each door, that the tipping weight of the Unit is now 80 pounds. This results in a ‘too heavy’ tipping/lifting weight on the front of the Unit.

To regain the proper lift weight, of say 30 to 50 pounds as desired, 30 or 35 pounds of weight can be welded onto the rearmost portion of the Unit. We have found that a ‘grader blade’ or equivalent heavy piece of metal can be fitted and welded onto the top rear most portion of the Unit which, when added, easily brought the balance back into proper design specifications.

Repairing a LIGHT lifting/tipping weight

To correct a too light front tipping weight, metal of appropriate weight can be welded onto the front of the Unit to bring it back into good balance.

The manufacturer can make suggestions on how to do the fix if consulted. Please call Alaskan Stoves anytime and ask for Chris 907 590 7363.

Adjusting the lifting weight of the Burn Box portion of the Unit to regain proper balance should take just a few hours of work for a person handy with tools and machines.

2. Stack Burn Out

Stacks do burn out which is considered a normal wear item. Building the stack out of thicker material to resist burnout is not practical. However a solution now incorporated into all new Units, is a stack built out of stainless steel. Stainless steel will give years more service life to this part of the Unit.

Replacing the stack with one ordered from the manufacturer will give you a longer service life for the whole unit.

DIY repairs for Stack Burn out

Options for DIY repairs could be the use, fabrication and attachment, of some similar diameter material. Or to patch-repair burn through holes as they occur:

- a) drill and screw patches of metal over holes
- b) spot weld patches over damaged portions



Summary: Options are to patch, repair, or replace the smokestack to extend its life. You can order replacement smokestacks from the manufacturer. Options:

- a) a steel replacement as came with the original
- b) upgrade to a stainless steel model which is more expensive but lasts longer

3. Rear Door Damage or Burn Through

Should physical damage occur to the rear door or hinges, due to a wind storm, or possibly by driving a piece of equipment into it, local repair might be viable. Local mechanics or welders can use patch repair metal of similar thickness to fix.

DIY Hinge/bolt Repair

If the hinge hangers or bolts are bent or broken or bolt holes distorted from use, replacement parts of like materials can be used.



DIY Rear Door Repair

As with the stack repair, if there has been rust or burn through holes, fabrication and attachment of patch material to repair burn through holes can work:

- a) drill and screw patches of metal over holes
- b) spot weld patches over damaged portions

If the rear door itself has been compromised beyond repair due to heat distortion or large rust/burn through, replacement of entire door assembly is in order and can be ordered from the manufacturer:

A replacement door will come with bolts, hangers, and reinforcement brackets. These brackets will require small welds to attach. Should your community not have the personnel or machine to weld the brackets on, then special brackets can be sent with the new door which will only require drilling the holes and bolting on the brackets in place. Please specify when ordering.

4. Front Door Misalignment

Stress heat may alter the door fit over time. The hinge plates are designed to allow for periodic readjustment if needed.



DIY Misalignment Repair

Two $\frac{1}{2}$ inch nuts are ‘jammed’ together in four places on each hinge plate. Two $\frac{1}{2}$ inch wrenches are needed to first unjam all the nuts on both hinge plates on the door to be adjusted. Adjust door for alignment.

5. Front Door Rust/Burn Through

Older Units, (pre 2016) had light gauge metal panels on doors. All doors are now made with heavier gauge metal to extend life of these components.

DIY Front Door Repairs

Patch repair may be a viable repair to extend the life of existing Units.

- a) drill and screw patches of metal over holes
- b) spot weld patches over damaged portions

Prorated repair or replaced parts can be ordered and negotiated with the manufacturer. If distorted or damaged beyond practical repair the doors can be shipped back to the manufacturer for repair or replacement (please include shipment both ways).

Caution: Field repairs may alter the balance/tipping force required to clean out the ash, [refer to "Section 1. Out of Balance Condition" for procedures if required.]

6. Rack Burn-Out or Excessively Warped

DIY Repair

Replace damaged rack parts with similar sized pipe.

Replacement pipe rack assemblies can be purchased from the manufacturer if desired. These assemblies are mostly ‘drop in’ parts. However we have tried various methods of pipe rack attachment methods throughout the years and have found that some welding of pipes is required. We can advise your welders on how to do this once the parts arrive.

7. Binding During Tip-Up

Occasionally the whole unit may bind up when trying to tip the box. An indication of binding might be that the front bottom edge of the burn-box face is not sitting level with the platform.

The burn box portion of the Unit grows in height and narrows in width naturally over the years with use. This is caused by the heat of the burning and the extreme fluctuations in weather. This narrowing may cause the central support band which runs circumferentially around the Unit to now interfere with a support beam on the trailer or skid platform frame.

DIY Repair for Binding

- a) To correct for normal binding conditions, ensure that the Unit platform is level
- b) To correct for binding caused from narrowing, you can eliminate the interference or binding of the Burn Box with the frame underneath by cutting about one inch of the band out using a torch. Please call for instructions if needed.

8. Paint/Appearance Maintenance



Painting the Burn-Box portion of the Unit each year should extend the life of the Unit marginally preventing rust. So even though painting will just have a small effect directly protecting the Burn-Box, the manufacturer still recommends painting once each year for two reasons:

1. When a maintenance person is actively cleaning a unit in preparation for painting they are more likely to spot any areas which could need repair such as cracks that need welding, or loose or damaged brackets that need repair. It takes 3 quarts of stove black paint thinned with 20% paint thinner. For other questions please call the manufacturer.
2. If your site and your equipment at your landfill is kept looking ‘Good’, the people using the facility will more likely be respectful of the labor that your maintenance operators put into keeping your site in order. I believe that it is human nature to treat things better, i.e., ‘to do the right thing’ when they see a clean well ordered, good-looking site, and hence will treat the equipment and Burn Unit as it is designed to be used. Thereby the facility operator and maintenance personnel will indirectly extend the life of the Unit just by painting it.

9. Tire Maintenance

Keep the tires at 40 psi to prevent cold weather flats on the trash bins and the Trailer Mounted Burn Unit.

If your community does not have tire repair capabilities it may be worth requesting solid foam filled tires when initially ordering the transfer trash trailers or the Trailer Mounted Burn Unit. This adds a slightly higher cost to the trash bins and the Burn Units:

- a) Plus \$250 for the Trash Bins
- b) Plus \$520 for the Burn Units

An extra few hundred dollars will be money well spent if there are no tire repair capability in your area. It takes a month's advance notice if this option is requested. The Fairbank's tire manufacturer only does the foam fillings once a month. This option also adds 45 pounds of weight to each trash bin tire (90 pounds) and 65 pounds for each Burn Unit tire (260 pounds).

Beginning in 2017, all Burner Units will come with foam filled tires. Foam filled tires are not recommended for the trash bin trailers. But if you desire it, they can be provided at an additional cost.

Summary

Tok Welding (DBA Alaskan Stoves) takes great pride in these Burner Units. We have specific design elements that burns your trash hotter and faster than other poorly designed units. We stand behind any manufacturing flaws when properly sized for your village and with normal use. Maintenance is your responsibility and you must expect parts wear and tear and be able to repair and adjust for these occurrences, as referenced above.

This guide is designed to help you keep your unit in good working order for many years. If you have any questions about maintenance or what is considered to be "normal use," do not hesitate to call. For example, during the Eagle clean up after the ice damage a few years back, a unit was ordered to burn the huge amount of debris. The unit was in use all day every day and was burning very hot. Under these conditions, Burner units will deteriorate five times faster or greater than under normal circumstances. Maintenance will increase exponentially and you would expect to be replacing grates and experiencing burn throughs at a very high rate. Burning trash 24/7 is not considered normal use. Although we worked with Eagle to help with the expected issues, under conditions like this, you will be advised that your maintenance will increase in proportion to your use.

You can expect many years of use from an Alaskan Stoves Burner Unit for your village. If you properly maintain the unit, it should last up to 10 years or more. Let us answer any questions you have before you order. We want you to be satisfied with your choice and know that you are getting the best value for your investment.