ALUMINUM KING MFG LTD

Aluminum Sweat Furnaces

An Essential Tool in the Recycling of Aluminum

There is a demand for aluminum ingots because the manufacturer knows their composition. Ingots make a cleaner product and are ready for the mill. An aluminum recycler can send samples to the mills for analysis and that determines the price the ingots bring. There can be a 10 cents per pound spread in the various types of products that come from recovered aluminum

When looking for a furnace, one of the most important steps is to make sure it meets Federal regulations and local ordinances (which can be more strict than Federal). Furnaces must have afterburners and computerized data loggers in order to use the furnaces legally.

All our furnaces come with a combustion chamber with a temperature probe to show the average 1600 degree temperature (as required by law) and a data logger. The data logger tracks and saves the temperature information and how long the gas is retained in the chamber into a computer file, which can be accessed by inspectors. It used to be that the log was printed out on a machine that was like a ticker tape, but that is not legal anymore. There is less chance that the data can be tampered with on the computer. Aluminum sweat furnaces generally handle between 500 to 2000 pounds per hour depending on the size of the unit.

Jerome Mostek, owner of Aluminum King, said his company consulted the Environmental Protection Agency when the laws concerning sweat furnaces were being rewritten.

The afterburners/combustion chambers must hold the gases produced from the melting of aluminum for at least 8/10th of a second and the temperature must average 1600 degrees Fahrenheit. All Aluminum King furnaces are designed with afterburners, but if you are looking at a used furnace that does not have an afterburner, we can design one for you. The afterburner keeps the gases containing these substances enclosed and the substances are burned away before they can enter the air stream.

After making sure a manufacturer has an after-burner and data logging system with their furnace, you will need to look at the structure of the furnace. The structural design and the thickness of the outside steel plates and reinforcement are essential.

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Getting the right size furnace for the amount of aluminum you have to melt is necessary in the melting process and for fuel consumption. Most recyclers melt transmissions, cylinder heads and manifolds. Aluminum furnaces can handle other items though, such as railroad cars, trailers, four-wheel all-terrain vehicles and motorcycle aluminum.

All material melts in the same manner. You have to match their air/gas flow to the size of the metal you are trying to heat. A good melting cycle is 15-20 minutes. There are certain ways to melt— lighter metals burn more quickly than say a motor. You can mix all aluminum together, but if you can segregate the different aluminums, you will get more money,ve 50 to 60 percent recovery.

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Getting the right amount of burner means a higher recovery rate. Some products have a 25 percent recovery rate, while some thicker, denser aluminum can have 50 to 60 percent recovery.

The largest expense of running a sweat furnace is the fuel cost. The furnaces use natural gas, propane or #2 diesel oil. Permits can be granted for the use of waste gasoline and waste oil as well.

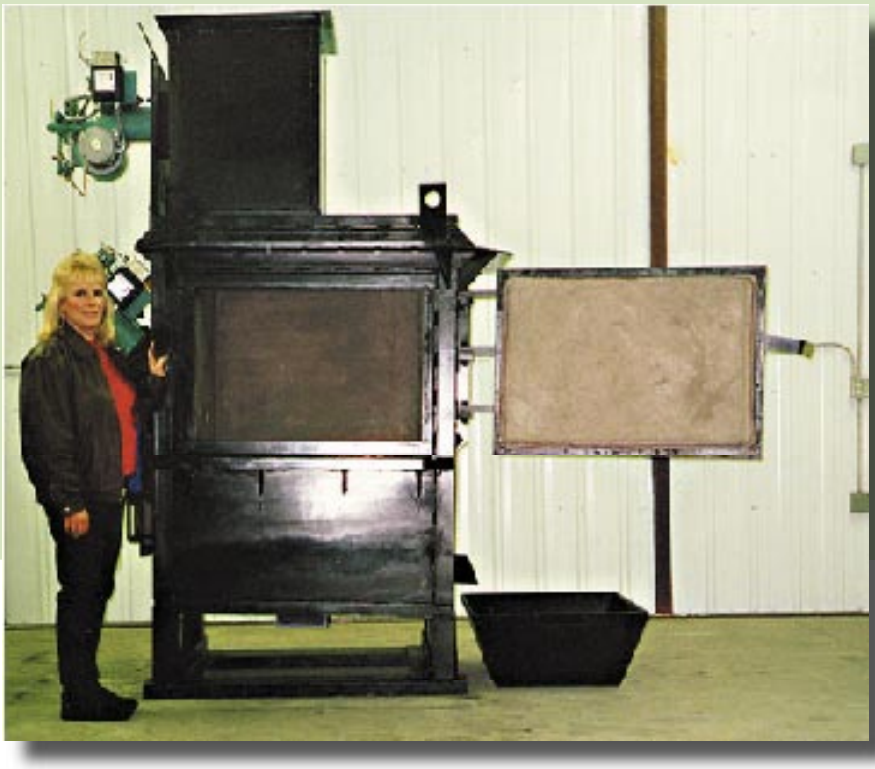
Fuel costs can run from 2 cents to 4 cents per pound of aluminum melted. Other factors that go into the total cost include operators, forklifts, maintenance, and so on.

Maintenance includes taking care of the rare refractory and firebrick lining of the smelters. Mr. Mostek said there is putty made of a high refractory cement that can be used on any chips or cracks. As long as workers do not put in items that will burn up the lining, a recycler can get about three million pounds through a furnace before doing any relining.

Burner tune ups and retraining of staff can also add to the life of the lining and the furnace. Proper training of the staff and retraining sessions are really important. Correct operation of the furnace is the key to maintaining a good product and long lasting equipment.

AK3500

The AK3500 will hold as many as 8-9 whole transmissions and has a 20 minute cycle time. The AK3500's holding chamber holds 500-600 lbs. and can fill a 600 lb. sow in one pour.



Overall Size:
90"Hx35"Wx46"L

Feeding Door Opening:
23"Hx35"W

Rake Out Door Opening
11"Hx27"W

Inside Chamber:
50"Hx27"Wx37"L

Shipping Weight:
10,800 lbs. approx.

Accessories:
2 - 500 lb. sow molds
2 - Rakes
1 - Plug

Electrical:
110 volt hook-up

Inside Chamber:
50"Hx27"Wx37"L

Fuel:
Natural gas or propane

Construction:
1/4" steel sheel
4 1/2" of fire brick

Warranty:
1 year on electrical components & burner
6 months on structure fabrication

Main Burner:
750,000 to 1 million BTUs

After Burner:
Same as main burner

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AK6000

The AK6000 will hold as many as 20-22 transmissions at once. The cycle time is 20 minutes. This model's holding chamber is approxomately 850-900 lbs.

Overall Size:
100"Hx46"Wx64"L

Feeding Door Opening:
23"Hx53"W

Rake Out Door Opening
18"Hx36"W

Inside Chamber:
61"Hx36"Wx53"L

Shipping Weight:
14,300 lbs. approx.

Accessories:
4 - 500 lb. sow molds
2 - Rakes
1 - Plug

Electrical:
110 volt hook-up

Fuel:
Natural gas or propane

Construction:
1/4" steel sheel
4 1/2" of fire brick

Warranty:
1 year on electrical components & burner
6 months on structure fabrication

Main Burner:
750,000 to 1 million BTUs

After Burner:
Same as main burner

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AK7000

The AK7000 will hold about 40-45 transmissions and has a 20 minute cycle time. The holding chamber for the AK7000 is 1200-1500 lbs. This model will easily poor a 1200 lb. sow at once.

Overall Size:
108”Hx61”Wx73”L

Feeding Door Opening:
27”Hx63”W

Rake Out Door Opening
20”Hx52”W

Inside Chamber:
68”Hx52”Wx62”L

Shipping Weight:
22,300 lbs. approx.

Accessories:
2 - 1.2000 lb. sow molds
2 - Rakes
1 - Plug

Electrical:
110 volt hook-up

Fuel:
Natural gas or propane

Main Burner:
1.7 - 2 million BTUs

Construction:
1/4” steel sheel
4 1/2” of fire brick

Warranty:
1 year on electrical components & burner
6 months on structure fabrication

After Burner:
3/4 to 1 million BTUs

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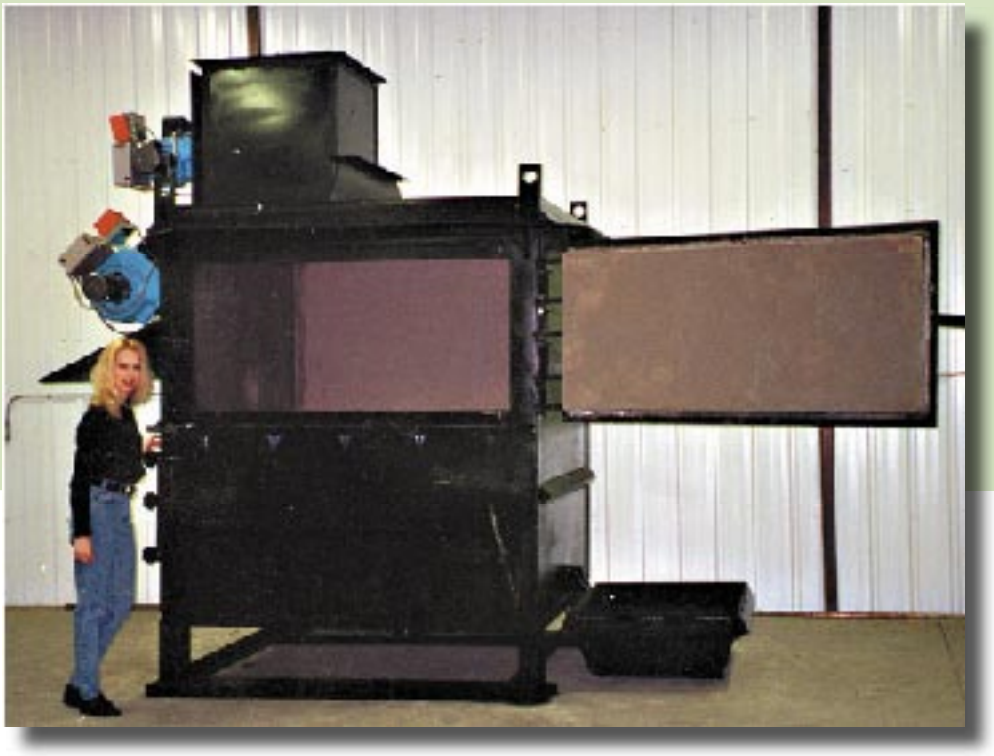
AK8000

The AK8000 will hold about 50-55 transmissions and will cycle in 20 minutes . The AK8000's holding chamber is 3000-3200 lbs.



Overall Size:
115"Hx70"Wx82"L

Feeding Door Opening:
31"Hx71"W

Rake Out Door Opening
20"Hx60"W

Inside Chamber:
71"Hx60"Wx71"L

Shipping Weight:
24,300 lbs. approx.

Accessories:
3 - 1.2000 lb. sow molds
2 - Rakes
1 - Plug

Electrical:
110 volt hook-up

Fuel:
Natural gas or propane

Main Burner:
2 - 2.3 million BTUs

Construction:
1/4" steel sheel
4 1/2" of fire brick

Warranty:
1 year on electrical components & burner
6 months on structure fabrication

After Burner:
3/4 to 1 million BTUs

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AK8500

The AK8500 holds approximately 70-80 whole transmissions and can cycle as little as 20 minutes. The AK8500 has a holding capacity of 4500-5000 lbs. This model can pouir two - 1200 lb. sows at once. Great for melting attached whole motors with transmittions. AK8500 will hold approximately 5-6 of these at one time.

Overall Size:
117”Hx79”Wx82”L

Feeding Door Opening:
31”Hx71”W

Rake Out Door Opening
20”Hx69”W

Inside Chamber:
73”Hx69”Wx71”L

Shipping Weight:
27,000 lbs. approx.

Accessories:
6 - 1.2000 lb. sow molds
2 - Rakes
2 - Plug

Electrical:
110 volt hook-up

Construction:
1/4” steel sheel
4 1/2” of fire brick

Warranty:
1 year on electrical components & burner
6 months on structure fabrication

Fuel:
Natural gas or propane

After Burner:
3/4 to 1 million BTUs

Main Burner:
2 - 2.4 million BTUs

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Extra Accessories

Sow Molds	Price
500 lb	$350
1,000 lb	$750
Stack	
Unlined per foot	$175
Lined per foot	$300
Rakes	$45
Plugs	$45
Temperature Probes Logger, etc.	$1,500

All prices are F.O.B. Mitchell, IA

Aluminum King now has waste oil and gasoline burners available.

Aluminum King is not licensed to install equipment. Contact your local service professional.

25% deposit required to start order.

Balance due upon date of delivery.

Prices are subject to change.

We reserve the right to change any typographical errors.

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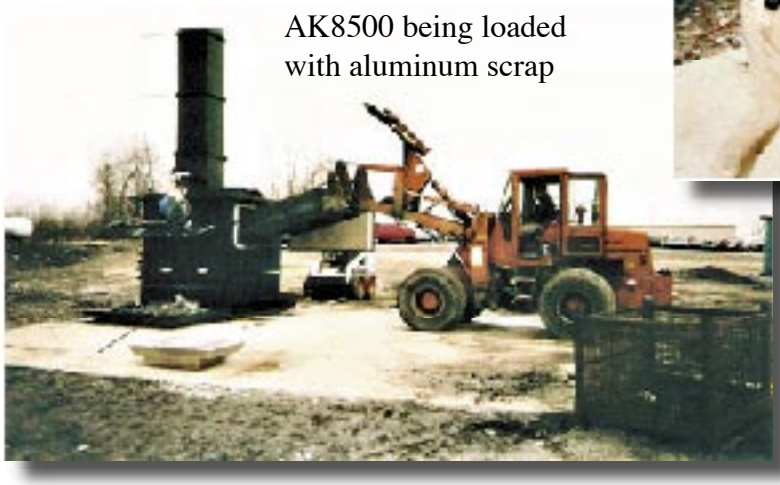
Financing/Leasing Companies:

Dade Capital Corp
Toledo, Ohio
Dave (800)823-9688

Two 1200lb. sows being poured with the AK8500

AK8500 being loaded with aluminum scrap



Raking doors (two doors) where slag and iron is removed

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