



Car Bottom Furnace

On the surface a Car Bottom Furnace looks pretty simple: a heat chamber, a door of some kind, a car with railroad-type wheels, and a heating system. But because of the heavy load weight and high energy input involved with a typical Car Bottom Furnace, the cost of operation can be higher than necessary if just one of these details is less than optimum. The bottom line – many furnace builders can put together a Car Bottom Furnace, but HTF builds the best – here's why.

Heat Chamber

When we design a Car Bottom Furnace heat chamber, we optimize the insulation grade, thickness and density to fit your particular application. All three factors influence how quickly the furnace will come to temperature, and how much energy is consumed during operation. Getting it wrong can be a real problem – insulation that's too thin is cheaper but you can end up with a dangerously hot shell, long heating times, and wasted energy, or even worse, the wrong grade of insulation won't hold up and can be expensive to replace with the right material. It takes experience to get the right balance, and our installed base of efficient, cost-effective Car Bottom Furnaces demonstrates that HTF knows how to get it right.

Door Design (see photo below on left)

The two choices are door-on-car or vertical lift. In either case, the crucial consideration is how the door is sealed to the heat chamber, and this is the 'secret sauce' of the HTF Car Bottom Furnace design. A poorly-sealed door can cost you plenty in terms of longer heat up time and wasted energy, but the HTF design is tight and long-lasting for years of efficient, trouble-free service.

Car Design (see photo below in center)

The Car Bottom Furnace is typically used to process very heavy loads, so the car itself has to be robust. At the same time, the process may require relatively fast heating or cooling, or it may be subject to thermal shock. In those cases the unique HTF 'soft car' design is the best approach because it combines heavy load-bearing capability with lightweight, thermally efficient insulation. The result is a durable, responsive Car Bottom Furnace that provides the best of both worlds: cost-efficiency in a low-maintenance package.

The second important aspect of car design is the system that seals the car to the heat chamber. Because the entire perimeter of the car is a potential heat leak, a good, tight, robust sealing system is critical. The HTF car-seal design is an innovative approach that long ago solved the problems of traditional designs, which distort and leak heat, leading to even more distortion and leakage. The HTF car-seal design guarantees minimal heat leakage and is simple, easy to maintain, and effective.

Heating System

There's more to a good heating system than just bolting on enough heating elements or burners: the proper arrangement of heat sources and flues is critically important to achieve temperature uniformity, controlled heating rates, and optimized energy usage. It takes experience and expertise, and HTF has the track record to show we have what it takes to do it right, for every application, every time.

The Car Bottom Furnace can be a very important part of a heat treating operation. Call us today, we can help you.

