SNIF SHEER R-140UHB, P-140UHB, P-140Ui

ALUMINIUM REFINING SYSTEM

The Pyrotek SNIF SHEER R-140UHB and P-140U Double Nozzle Systems provide a nominal continuous refining rate of 140,000 lb (63,500 kg) per hour. The system consists of a refining furnace, two SNIF SHEER spinning nozzles, and PLC automated process and furnace heating controls.

R-140UHB and P-140U furnaces are divided into two separate and distinct refining chambers, each equipped with a spinning nozzle mounted to the furnace cover. Each chamber is designed to permit optimum process gas bubble saturation throughout the melt to maximize spinning nozzle refining efficiency. An internal baffling system controls the flow of metal, ensuring efficient refining of the molten aluminium as it flows through the refining furnace.

The deep furnace inlet and outlet ports are designed for applications requiring additional metal head for priming downstream filtration systems. The four-port arrangement allows installation flexibility. The furnace may be installed in-line; in a "U-turn" configuration that reverses metal flow; or in an "L" configuration that changes the metal flow direction by 90 degrees.

"Trough airlocks" installed in the inlet and outlet ports allow metal to flow freely in or out of the furnace, but prevent air infiltration, a cause of excessive dross formation. Technical information describing the advantages of using trough airlocks in SNIF systems is available upon request.

A tap-out drain is provided to empty the furnace for alloy changes or extensive cleaning. A tilting furnace is available as an option.

The SNIF furnace features a self-contained hydraulic cover lifter that raises the top to expose the entire surface of the bath for cleaning and servicing. In the closed position, the cover provides an excellent perimeter seal that prevents air infiltration and excess dross generation.

SNIF R-140UHB FURNACE

The R-140UHB is a specially designed refractory-lined refining furnace. Three furnace walls are constructed of an inner layer of poured-in-place cast refractory and multiple layers of insulating boards. The fourth wall of the furnace contains a graphite heater block with removable electric heating elements. This internal heating system provides continuous temperature control of the metal in the refining furnace.

SNIF P-140UHB FURNACE

The P-140UHB furnace is identical to the R-140U except that it has a quickly and easily replaced refractory lining cartridge. When the furnace refractory needs to be changed, the old cartridge is simply lifted out and replaced with a new one. The cartridge can be replaced in one or two days, possibly without removing the steel shell from the casting line. The system can be returned to service after a 30-hour pre-heat.

The lining cartridge consists of a dense, hot-face refractory and multiple insulation layers. All refractory is non-wetting and pre-cured. The cartridge is enclosed in foil to prevent moisture absorption while in storage and to minimize contact with the insulation during handling. The cartridge contains a graphite block heating system with removable elements.

SNIF P-140UI (IMERSION HEATRED) FURNACE

The P-140Ui furnace is similar to the P-140UHB system except two ceramic immersion heaters are suspended from the cover (1 installed in each chamber) instead of the graphite heater block.

OPTIONS

R-140UHB and P-140U furnaces can be ordered with the following options:

- Hydraulic tilting system to empty the furnace between casts for cleaning or alloy changes
- Swivel mast that both lifts and rotates the cover
- Customized controls

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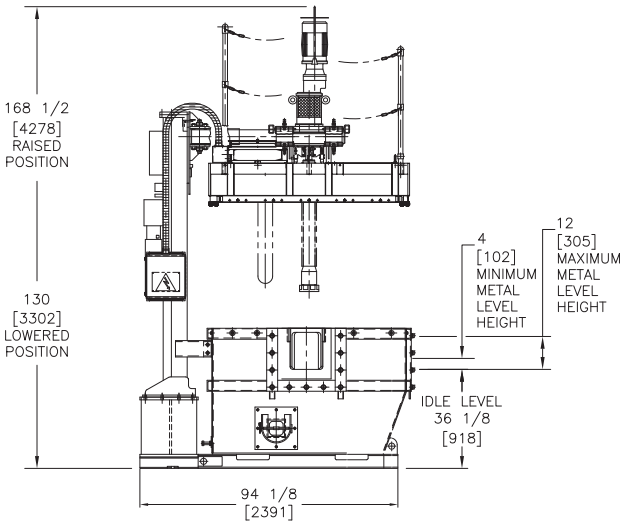
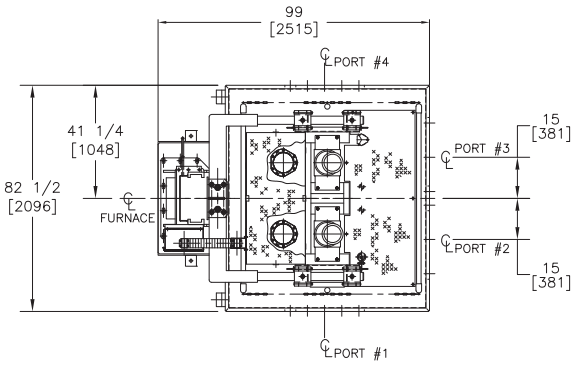
Total Electrical Load (Maximum)*	
P-140Ui (Immersion Heater)	50 kW - 3 Phase
P-140UHB (Heater Block)	60 kW - 3 Phase
Cover Lifter	2 kW - 3 Phase

** Primary voltage per customer requirements. Refer to the installation drawings for electrical interconnection specifications for the equipment provided.*

Gas Supply Requirements (English, Metric)		
Process Gas (Argon recommended)	600 scfh at 70–90 psig (max.)	15.8 Nm^3/hr at 4.9-6.3 kg/cm^2 (max.)
Heater Block Purge Gas (R-140UHB and P-140UHB only) (English, Metric)		
• Argon (recommended)	30 scfh at 50 psig (max.)	0.8 Nm^3/hr at 3.5 kg/cm^2 (max.)
• Nitrogen (alternate)	60 scfh at 50 psig (max.)	1.6 Nm^3/hr at 3.5 kg/cm^2 (max.)
Cover Lift Mast (Plant Air)	60 to 90 psig	4.2 to 6.3 kg/cm^2
Chlorine, if required	30 scfh at 30 psig (max.)	0.8 Nm^3/hr at 2.1 kg/cm^2 (max.)
scfh = standard cubic feet/hour (70°F, 14.696 psia) Nm^3/hr - normal cubic meter/hour (0°C, 1.01325 bar, abs.)		1 Nm^3/hr = 38.0 scfh 1 kg/cm^2 = 14.2 psi

General Specifications		
Refining Furnace Capability (nominal)	140,000 lb/hr	63,500 kg/hr
Furnace Power Rating		
P-140Ui (Immersion)	40 kW	40kW
P-140UHB (Heater Block)	45 kW	45 kW
Furnace Static Capacity		
P-140Ui (Immersion)	4,800 lb	2,160 kg
P-140UHB (Heater Block)	3,900 lb	1,760 kg
Cover lift Assembly Weight	2,300 lb	1,050 kg
Estimated furnace assembly weight including cover, static metal capacity, cover lift assembly, and spinning nozzle	25,200 lb	11.430 kg





Note: The physical and chemical properties listed represent typical, average values obtained in accordance with accepted test methods and are subject to normal manufacturing variations. They are supplied as a technical service and are subject to change without notice.

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