



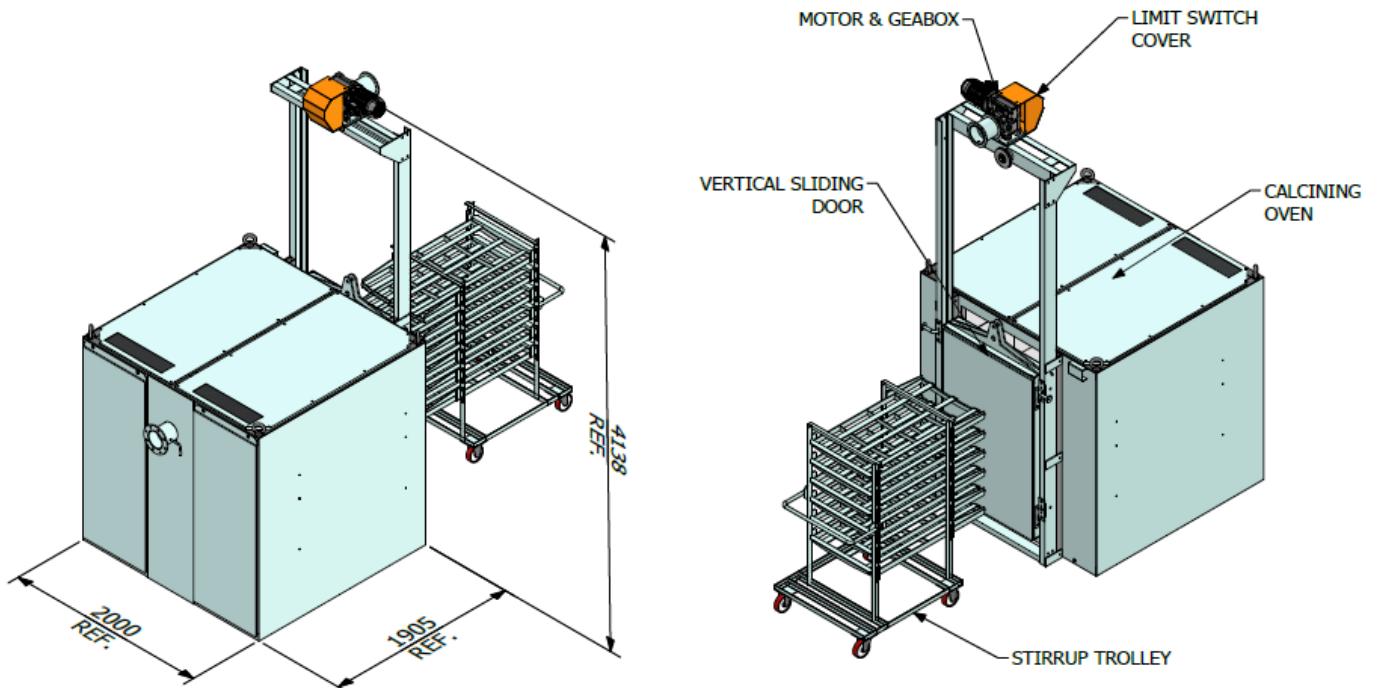
CALCINE OVEN 6E SPECIFICATIONS

Overview

This type of equipment has been extensively manufactured by ourselves for the precious metals industry since our inception in 1959. We have steadily grown over the years into the enviable position of being market leaders in this field in Southern Africa, as well as various other parts of the world. More specifically, the equipment proposed is identical to the very many units we have manufactured and supplied to gold mines around the world.

“KEEGOR” is a registered trade/brand name to the Keegor Group of companies and has become synonymous with the quality and reliability expected by the precious metals mining industry.

Equipment Layout





CALCINE OVEN 6E SPECIFICATIONS

Calcine Oven Overview

6-Tray Calcining Furnace Complete Unit

Stock code - CAL6-FP-01

We have units operating at numerous small/medium-sized gold mining operations both locally and internationally (equipment originally manufactured by ourselves), but the latest generation.

For the design, manufacture, shop testing and ex-works delivery of 1 (OR MORE) “KEEGOR”™ 6-Tray, Batch-type, Drying Oven / Calcining Furnace.

Our supply would include the following:

- Furnace steelwork (frame, door, etc.).
- Motorised winch arrangement for door, or parallel motion single swing door.
- Electrical control panel with all switches, push buttons, relays, temperature controller, over-temperature controller, all electrical switchgear, etc., - all for the complete control of the furnace.
- A 24-hour, 7 day, weekly timer would be installed in the control panel of the furnace as standard. This could be set so as to turn the furnace down to a lower temperature set point, in the evenings, over weekends and non-production days, and return back to normal operating temperature in the early mornings. This has proven to be a great saving on electricity, as well as being the preferred method of operation, and has the added advantage that the furnace is back to operating temperature by the start of the working day, when required. Also, and probably more importantly, it is possible to soak the furnace at a lower temperature overnight and automatically increase to normal operating temperature in the early hours of the morning - this prevents sudden thermal shock on the refractories, by trying to heat up the furnace from cold too quickly, which can cause costly repairs within a short time. Our price includes for the installation of a dual set-point temperature controller (in place of the single set-point unit normally installed), working in conjunction with a 24 hour, 7-day weekly timer. Additionally, 'High' and 'Low Set-Point Operating' indication with the respective slave relay would be installed to indicate at a glance which setting is current.
- Complete refractory lining, with set of Heating Elements, thermocouples, heat-fuses, etc. or set of burner components and allied controls (dependent on option selected)
- Electrical key-switch for locking the motorized hoist on the door.
- First set (of 6) stainless steel support cradles. These support the trays within the furnace.



CALCINE OVEN 6E SPECIFICATIONS

Calcine Oven Overview

- A stainless steel rack option is also available that will replace the cradles & enable the operator to off-load all 6 trays at once with a forklift.
- First set (of 6) stainless steel Calcining Trays. These lie loosely on top of the Support Cradles (see item above) within the furnace. Standard type - Grade 304 Stainless Steel, 2,0 mm thick) | Grade 316 stainless steel available upon request. This is the standard option, giving good life at a reasonable price. More expensive trays can be offered, but will not necessarily give better service, as this is dependent on chemical attack by the concentrate to be treated, operating temperature, etc.
- The 6 tray calciner is also available with a swing type door upon request

Tray Extractor Hook - Optional Extra

Stock code - CAL6-T-01

This is an extracting handle/hook to pull and slide the trays out the furnace and onto the tray support stirrup trolley.

Tray Support Stirrup Trolley - Optional Extra

Stock code - CAL6-T-02

This is a trolley to support and carry a full set of trays after removal from the furnace and allow the set of trays to cool down in a safe area and be moved around the gold room easily.

Spare Calcining Trays - Optional Extra

Stock code - CAL6-C-01

These lie loosely on top of the Support Cradles (see Item below) within the furnace. Standard type - Grade 304 Stainless Steel, 2,0mm thick. Other grades and thickness' available - details on request. For the manufacture and supply of stainless steel Calcining trays to suit the above furnace/s.

Spare Calcining Stainless Steel Tray Support Cradles - Optional Extra

Stock Code - CAL6-C-02

These support the trays within the furnace.

Spare Calcining Stainless Steel Tray Support Rack - Optional Extra

Stock Code - CAL6-C-02

This will allow for all 6 trays to be loaded at the same time using a forklift. This option also helps preserve muffle walls as all the weight rests on the rack & floor, preventing damages to the interior walls of the furnace



CALCINE OVEN 6E SPECIFICATIONS

Technical Specification

Calcine Oven - 6 Tray Electrical			
Dimensions			
▪ External (mm)	(W)2040 x (H)2070 x (D)2110 - A frame (H) 4160		
▪ Internal (mm)	(W)785 x (H)1270 x (D)1380		
▪ Mass (Kg)	(+/-) 6000		
▪ Volume (m3)	1,38		
Tray & Working capacity			
▪ Quantity of Trays	6		
▪ Dimensions (mm)	(W)675 x (L)1125 x (D)75		
▪ Capacity per tray	(+/-) 57 liters	0.057m3	
▪ Working capacity	(+/-) 342 liters	0.342m3	
Nominal Power and Voltages			
▪ Electrical Rating	70kVA	Nominal Power	
▪ Voltage	3 Phase+E	400V	Standard
▪ Voltage	3 Phase+E	Any	On request
Operating Temperature			
▪ 150-200° C	For drying		
▪ 750-800° C	For calcining		
<p>Rate of temperature rise is not possible to accurately specify, as this will be determined by amount of through draft (exhaust gasses being exhausted).</p> <p>This is adjustable if a simple butterfly flap is in the flue pipe) as well as the mass and specific heat capacity of product being loaded into the trays.</p>			
Instrumentation			
▪ Thermocouple	Type "k"	2-of	Back and roof of the oven
▪ Heat fuse	960° C	2-of	Back of the oven
Door Motor Drive			
▪ Motor Details	Size:	1.5kW	Type: 4 Pole IE3 Motor B5
▪ Gear Box Details	Type:	Worm gear	Rato: 100:1 / B5 Mounting
Maintenance and Operational Clearance			
▪ Clearance at rear for maintenance in (mm)	1000		
▪ Clearance in front for operation in (mm)	2000		
Casing			
▪ Heavy rolled steel sections encased in heavy gauge steel plate			
Door Gear Parallel			
▪ Shallow box fabricated from steel plate, which moves on parallel motion hinge gear			
▪ The hinge pivot points all comprise machined bearing cups housing heavy-duty bearings, adequately capable of supporting the dynamics of the door.			



CALCINE OVEN 6E SPECIFICATIONS

Technical Specification

Door Gear Vertical	
▪	The door consist of a shallow box fabricated from steel plate suitably reinforced, which moves vertically in the steel channel uprights of the "A" frame, guided by machined wheels
▪	The top members of the "A" Frame supports the motor driven door hoisting gear, with operating controls mounted in the control panel
▪	The "A" Frame containing the door is shipped seperatley. The installation of the "A" Frame be completed on site by the end user or installation team. It is recommended that the installation of the "A" frame takes place while rigging equipment e.g. crane is available on site.
Muffle	
▪	The muffle walls are on either side of the working chamber and effectively seal the element chamber from the working chamber so that the elements are not affected by moisture and or other fumes that may be present
▪	The muffle walls are built of special Silicon Carbide bricks having a high rate of thermal-conductivity (to ensure efficient transfer of heat from the element chamber to working chamber) and resistance to chemical attack
▪	Three Silicon Carbide ledges are provided on each inner wall of the muffle, spaced at 190 mm intervals
▪	These ledges are to carry the Stainless-Steel tray supporting grids
▪	A vent hole is provided at the top of the rear wall of the oven and coincides with a flanged opening in the outer steel shell of the oven to which the clients steel flue would be bolted.
▪	Flange Detail (mm) Ø265 O.D with 8-off Ø18 Holes on a 255 PCD - Mating flange supplied
Calcine Oven - 6 Tray Electrical	
Refractory Lining	
▪	High grade refractories on the hot face
▪	Backed by adequate layers of insulating materials, to give a relatively cool outer casing
Control Panel	
▪	Wall mounted Size: (W)1100 x (H)750 x (D)270
▪	Positioned away from the heat and fumes close to the oven
▪	Houses all electrical switch gear and safeties, to control the oven in a safe manner
Heating Elements	
▪	The elements are formed from heavy gauge 80/20 Nickel Chrome strip carried on hook pins of the same material
▪	The elements are suspended clear of the refractory lining to ensure free radiation of heat and are arranged to ensure a balanced load on the three-phase supply.
▪	An option is available for using Silicon Carbide heating elements in place of the Ni/Cr strip, specifically for operations where higher operating temperatures are required (up to 1200°C)
Finish	
▪	Oven Specially developed heat resisting paint
▪	Control Panel Powder coated electric orange or as per customer requirements
Alternate Heating Mediums	
▪	Diesel Burners
▪	LPG Burners
▪	N-Gas Burners



CALCINE OVEN 6E SPECIFICATIONS

IMPORTANT INFORMATION

Warranty

- We, KEEGOR warrant the satisfactory operation and durability of the mechanical parts supplied by us for a period of 12 (TWELVE) months from date of commissioning or 15 (FIFTEEN) months from date of shipping (whichever expires first) and will replace free of charge any parts which may prove defective either through faulty design, materials, or workmanship, fair wear and tear or accidents due to faulty operation excepted. KEEGOR has been a key global role player in the Precious Metals Refining and Assaying Industry for +65 years, with a very long and distinguished track record.
- It is understood that this warranty does not apply to the refractory materials or consumable items.
- Notice of a claim for alleged defective equipment must be given within 14 (FOURTEEN) days of a defect becoming evident.
- This warranty is limited to the supply of replacement parts and labour only, as may be required - shipping / transport / travel costs are not included.
- Full support is available at our ruling rates after expiry of the warranty.
- KEEGOR is not liable for any consequential damages.
- Electronic and electrical components sourced from sub suppliers are excluded or subject to supplier warranty conditions.
- Power electronic components and items which are subject to usage and operational conditions, are excluded.
- The connecting, usage and maintenance of induction coils is excluded. In particular failures due to incorrect clamping or water cooling of coils to bus bars.
- The responsibility for maintaining the quality of the cooling water is outside of our control and therefore we assume no responsibility for problems arising due to the end user failing to meet our specifications. For queries relating to the water-cooling requirements, please contact our service department.
- The warranty is not valid unless the make-up water supply to the cooling tower is installed and functioning. All cooling systems, internal and external are to be maintained to comply with the specifications defined in the instruction manual.