Heavy Duty Electric Hot Plate Laboratory Cast Iron Heating Plate

Item Number: KT-BA

Introduction

Discover our heavy duty electric hot plate engineered for solid material drying and sample preparation. Featuring a cast iron heating surface and smooth power control, it delivers uniform thermal transfer and exceptional reliability for demanding industrial laboratories.

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Application	Description	Key Benefit
Coal and Coke Moisture Analysis	Drying run-of-mine coal, washed metallurgical coal, and pulverized coke to determine total moisture and proximate analytical metrics according to international testing standards.	High thermal mass ensures rapid, steady moisture vaporization without localized surface temperature drops, accelerating daily sample throughput.
Geological and Mineral Ore Assay	Pre-drying crushed geological samples, rock core drillings, tailings, and dense mineral concentrates prior to pulverization, XRF screening, or acid digestion.	Flat cast iron surface accommodates heavy metallic trays and wide-bottom containers while maintaining uniform conductive heat transfer.
Soil and Environmental Sediment Testing	Evaporating moisture from soil cores, wastewater sludge cakes, and agricultural sediment samples for contamination and heavy metal composition analysis.	Stepless power modulation allows gentle thermal ramp rates, preventing aggressive boiling, sputtering, and hazardous sample loss.
Desiccation of Organic Solids and Combustibles	Controlled thermal conditioning, drying, and moisture removal from bulk organic solids, chemical intermediates, and combustible materials requiring stable thermal environments.	Spark-free thyristor regulation and an enclosed, insulated heating chamber deliver dependable, uniform thermal conditions for volatile-adjacent processing.
Foundry Sand and Refractory Binder Evaluation	Moisture determination and binder cure testing for green sand, silica aggregates, and refractory binding mixtures in metallurgical quality control laboratories.	Heavy load-bearing capacity withstands dense metallic sample containers without mechanical deflection or surface abrasion.
Chemical Solution Evaporation and Crystallization	Controlled liquid evaporation from inorganic salt solutions, chemical reaction slurries, and pilot precipitates in industrial development laboratories.	Continuous SCR power dialing maintains steady thermal equilibrium, preventing crusting, flash boiling, or thermal shock.
Bulk Industrial Material Conditioning	Conditioning ceramic precursor powders, synthetic pigments, granular polymer additives, and pilot-scale chemical intermediates in industrial QC facilities.	Expansive, smooth heating surface provides ample contact area for uniform batch processing with minimal maintenance overhead.

Parameter	Unit	KT-BA-1	KT-BA-2
Heating Surface Dimensions	mm	450 × 300	600 × 450
Power Supply Voltage	V	AC 220V	AC 220V
Heating Power	kW	1.8	3.6
External Dimensions (W × D × H)	mm	450 × 300 × 245	600 × 450 × 270
Unit Weight	kg	21	42
Heating Element Configuration	—	High-temperature Ni-Cr resistance wire on ceramic insulating brackets	High-temperature Ni-Cr resistance wire on ceramic insulating brackets
Temperature & Power Control	—	Thyristor (SCR) stepless power regulation dial	Thyristor (SCR) stepless power regulation dial

Parameter	Unit	KT-BA-1	KT-BA-2
Top Plate Construction	—	Heavy-duty ground cast iron plate, planar machined finish	Heavy-duty ground cast iron plate, planar machined finish
Chassis & Stand Material	—	Heavy-gauge sheet metal with spray-painted baked enamel	Heavy-gauge sheet metal with spray-painted baked enamel
Thermal Management Design	—	Bottom compartment isolated by thermal barrier; perimeter insulated	Bottom compartment isolated by thermal barrier; perimeter insulated
Power Cable Configuration	—	Underside chassis bottom exit	Underside chassis bottom exit

Component	Engineering Specification	Functional Benefit
Surface Plate	Heavy-gauge structural cast iron, precision ground	Eliminates thermal distortion; provides high thermal inertia and scratch resistance
Element Support Frame	High-temperature resistant electrical insulating brackets	Rigidly supports nickel-chromium elements and eliminates electrical short-circuiting
Thermal Insulation Layer	High-density refractory insulation packed around base and sides	Directs caloric energy upward to the working plane while insulating chassis walls
Thermal Barrier Shield	High-efficiency thermal partition plate between chassis and control bay	Prevents conductive and radiant heat transfer into lower electrical components
Control Enclosure	Modular under-chassis enclosure with independent access cover	Shields solid-state circuitry from laboratory bench spills, moisture, and mechanical impact
Surface Coating	Multi-layer industrial spray coating, oven-baked	Resists corrosive laboratory atmospheres, acid vapors, and chemical splashes