



In pursuit of perfection



New Dual Distillation
Rapid Analysis by doubling capacity

PELICAN
Kelplus - Ultima Duo Dist TS

First Time in World Market

KELPLUS
The Brand you cannot ignore
The Market Leader Since 1991

**THE LARGEST SELLING
NITROGEN ANALYZER IN INDIA**

Over 5000 Installation Nationwide



KEL PLUS + **KES 42**

PELICAN EQUIPMENTS

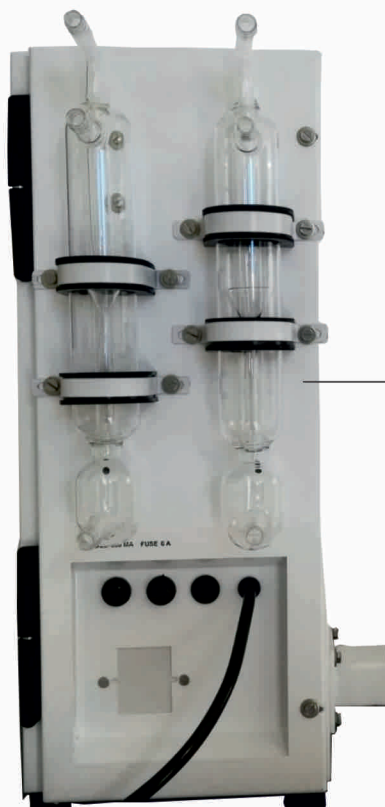
ISO 9001-2015 CERTIFIED & CE CERTIFIED - NSIC (GOI) REGISTERED ORGANIZATION

**AUTOMATIC AUTOSEQUENCING MICROPROCESSOR BASED PC COMPATIBLE
SIX PLACE MACRO BLOCK DIGESTION SYSTEM**



**Isolated Temperature
Controller in
control tower protected
from
Heat & Acid reaction zone**

SUCTION ASSEMBLY



**Wall Mounted Suction
Assembly on Rear side of Unit**

MODEL : KES 06 L E

TECHNICAL DATA - KEL PLUS KES SERIES

(ISO 9001 : 2015 CERTIFIED & CE CERTIFIED /GOI-NSIC REGISTERED ORGANIZATION)

AUTOMATIC MICROPROCESSOR BASED PC COMPATIBLE AUTO SEQUENCING BLOCK DIGESTION SYSTEM - ECONOMIC VERSION

SYSTEM	SIX PLACE MACRO DIGESTION SYSTEM - ECONOMIC VERSION
Models	KES 06 L E
No. of Samples	Six
Tube Capacity	Marked Borosilicate straight Macro digestion tubes with flaring finish Total volume (300 ml) working volume (250 ml)
Application	Suitable for plants, soils, water, food, fish & other animal feeds, Fertilizers, pesticides, Fodders, Heavy metals, trace metal & Cereals etc. (Suitable for micro & macro volumes from 0.1 to 3 grams depending upon the type of sample)
Tube Dimension	300 x 42mm
Digestion Time	30 - 60 minutes depending upon the type of sample
Temp. Controller	* Fuzzy logic Micro Processor based PID Controller with Auto Tuning Facility with Digital temperature Display * Temperature Controller is isolated separately in a control tower to protect electronics from digestion heat zone and acid reaction zone with separate access door for main unit & electronics control tower unit * Inbuilt add-on safety Stand by PID Temperature Controller for Heater & block protection apart from main microprocessor based integrated time temperature controller
Temp. Range	Maximum Temperature Control Range 500° C with safety cut off at 470° C (As per Kjeldhal chemistry effective digestion takes place 380° C - 420° C)
Temp. Accuracy	± 0.5° C
Temp. Setting	Anti corrosive chemical resistant Feather Touch Membrane soft touch Keys
Programmable Controller	* Selectable Programs (Customizable):Auto sequencing Features with 2 Intelligent memory programs * 8 desirable sequence ramp / steps of integrated auto sequencing time and temp. domain for each programme. * 16 Memory segments with intelligent software for PC compatibility for 2 way Bidirectional communication between equipments & PC
Hardware	* Superior PC compatible Auto Sequencing features * Microprocessor controls integrated programming of temperature and time * Auto acoustic signal (alarm) on completion of digestion * Auto power off mode on completion of digestion
Interface	RS 232 Interface for PC/Laptop connectivity
Heating Block	Aluminium Block perfectly insulated with ceramic wool (protects user from skin contact)
Heater	Casted Aluminium Alloy Heaters for uniform heating and even digestion of samples
Tube stand	SS Insert rack with cooling stand to place insert rack after digestion with polyamide insulated handle
Fume Exhaust	Exhaust Manifold System with high grade Teflon Adapters for intact seal for absolute removal of toxic fumes with SS manifold rack with polyamide insulated handle. Easy Autofix Spring Clamps
Suction Source	* KEL FLOW Suction Assembly with Giant suction filter pumps for safe removal of acid fumes * Suction Assembly wall mounted on rear side of unit for safe & easy access to drain area.
Power	1500W
Integrated Digital Timer	Range : 0 to 99.59 Settable in Hrs, Min & Sec. Digital Display of set time and actual time. Modes of operation : Heater cut off mode and alarm mode.
Built in Safety Features with CE to Fullfill GLP Norms	Auto over temperature protection / Auto Error indication /Auto Sensor break protection/Auto heater cut off feature with buzzer indication and alarm. Acoustic signals with visual display.
Elec. Requirement	230v/50Hz AC Mains

Includes all essential accessories for full fledged working of system

Manufactured & Marketed By :

PELICAN EQUIPMENTS

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ISO 9001-2015 CERTIFIED & CE CERTIFIED - NSIC (GOI) REGISTERED ORGANIZATION

Microprocessor Based Fully Auto Run Automatic Autosequencing Completely Programmable PC Compatible Nitrogen Distillation system with in-built software with added safety requirements to fullfill GLP & CE Norms



MODEL : CLASSIC DX



TECHNICAL DATA - KEL PLUS SERIES

(ISO 9001 : 2015 CERTIFIED & CE CERTIFIED/GOI - NSIC REGISTERED ORGANIZATION)

CLASSIC DX

KELPLUS Microprocessor Based Fully Auto Run Automatic Autosequencing Completely Programmable PC Compatible Nitrogen Distillation system with in-built software with added safety requirements to fulfill GLP & CE Norms

- Brand : KEL PLUS (Patented Trade Mark given by GOI)
 - ISO 9001:2015 Certified Organisation
 - CE Certified Product - mark of Quality to comply with essential safety requirement to fulfill GLP Norms
- * Application : Total Nitrogen, Organic Nitrogen, Protein Determination, Available Nitrogen, Nitrate Nitrogen, Nitrite Nitrogen, Ammonical Nitrogen, Devarda Nitrogen Determination in samples like meat, bone, blood, plasma, plants, soils, water, food & feed, Fodder, biomaterial, Fertilizers & pesticides.

* Follows Kjeldahl Methodology / Chemistry as per AOAC for all types of solid & liquid samples

FULLY AUTOMATIC MICROPROCESSOR CONTROLLED SEQUENCING OPERATION:

- * Fully Automatic Microprocessor controlled Autosequencing Nitrogen Analyser unit
- * The Ultimate Fully Auto Run Completely Programmable Auto Sequencing System
- * 100 Predefinable Autosequencing User Storage Programmes (Standard / customizable) with memory chip
- * Auto Intelligent run of Programmable Steps.
- * Auto User friendly "Prompt – Helpguide" Alpha Numeric Information Line, with Menu Driven Software
- * Auto Run mode & subsequent repeat run mode of samples
- * Auto sequencing of steps as per users choice
- * ATI – Auto hold feature of pre programmed menu.
- * Auto Indication of current step under process
- * 100 different users programmable code on single system.
- * Bright Digital counter with real time count down LCD display.
- * Machine Interface with 14 keys, 32 characters, Large 2 line back-lit Alpha Numeric Digital LCD Display.

BUILT IN COMPLETE FULLY AUTOMATIC SAFETY SYSTEM FOR USER PROTECTION WITH AUTO ERROR DIAGNOSIS

- * CE Certified which is a mark of quality and safety statutory requirement to fulfill Good Laboratory practice norms for user protection
- * Auto tube insert error indication
- * Auto deactivation of system on error diagnosis
- * Interlocked safety door
- * Automatic door open warning indication
- * Auto online water saving mechanism
- * Automatic over temperature protection of heater
- * Automatic Excess pressure release safety valve, Adjustable steam power.
- * Automatic water level monitoring safety feature to warn low level in steam generator and enable auto water refilling
- * Automatic heater cut off and protection device during low water level to avoid dry heating
- * Cooling fan for residual heat control and protection of electric and electronic components
- * Inbuilt strategically placed vent valves to avoid back suction
- * SMPS System for 12V power supply to give regulated voltage
- * Electrical components rack mounted and Isolated from alkali and water carrying parts,
- * Automatic Circuit break protection
- * Automatic over load protection.
- * Safety hood to avoid accidental spillage
- * Stainless Steel additional safety spill tray
- * Tongs to handle tubes
- * Heat resistant polypropylene tube removing device
- * Built in safety Components: Superior Perilstatic pumps with anticorrosive pumphead and silicone tubings to avoid direct contact with hazardous Alkali or Acid for corrosion free operation
- * Alkali / Acid fume parts made of Anticorrosive safe materials for user protection like Nylocast Polymer/ Vytan / Silicon / Stainless Steel etc.

- * The suction module of waste residue is door mounted for easy serviceability.
- * The control panel unit along with inbuilt temperature controller, timer, mother board and SMPS is isolated in separate control tower and housing to protect electronics from wet chemistry & acid/ alkali process area for longevity and safety of all electronic components.

AUTO DEACTIVATION ON " NO WATER CONDITION"

- * Automatic sensing of no water condition in the condenser & steam generator with auto alarm and warning indication to alert user
- * Auto deactivation of operation after few minutes of warning on "No water Condition" in case of user non availability in steam generator & condenser

DISTILLATE TEMPERATURE MONITORING

- * Automatic monitoring and measuring of high temperature in distillate with temperature display & sensor for auto warning signal and safety alarm to alert user to control distillate temperature.
- * Continuously measured temperature is displayed digitally.
- * Fuzzy logic Microprocessor based PID Temperature controller with Auto tuning facility
- * Auto over temperature protection, Auto sensor break protection and Auto error indication
- * Superior temperature measuring platinum sensor

AUTO INTELLIGENT RUN OF MAIN PROGRAMMABLE STEPS OF OPERATION WITH INBUILT DELAY TIME FEATURES IN BETWEEN MAIN PROGRAMMES

- * Automatic Addition of Receiver solution addition(Boric Acid)
- * Settling Delay time
- * Automatic Dilution
- * Dilution Delay time
- * Automatic inbuilt KMNO4 Addition for Available Nitrogen without external pump and accessory module
- * Reaction Delay time for Neutralization
- * Automatic Alkali Addition
- * Reaction Delay time for Neutralization
- * Automatic Steam Addition/Processing (Distillation Cycle) with Automatic Microbrilliant Distillate control with adjustable volume
- * Automatic Residue Delay time
- * Automatic Residue Removal
- * Process over indication with alarm
- * Automatic Titration connectivity feature for online titration for future upgradation with 4 pin socket

AUTO REAGENT LEVEL SENSOR WITH ALARM FOR REAGENTS

- * Alarm for reagent availability to eliminate errors
- * Individual reagent tanks for Boric Acid, Alkali & KMnO4
- * Inbuilt Automatic sensor to sense automatic reagent level.
- * Auto LED Indication to warn low reagent level
- * Auto user alert alarm for low level to refill reagents (H3BO3 Alkali & KMnO4
- * Reagent tanks wall mounted for easy handling and user visibility

RS 232 CONNECTIVITY FOR PC COMPATIBILITY:

- * Provision for RS 232 out put with USB convertor to connect Laptop / PC
- * Enables 2 way communication:
 - # PC can completely control operation of Distillation System
 - # PC can download datas from the Distillation System
 - # PC software for automatic calculation and reporting of results on feeding titre value.
 - # Interconnectivity cable to operate system through PC or Laptop

NITROGEN PARAMETERS

- * Nitrogen level: 0.1 to 200 mg Nitrogen (Min / Max Detection Limit)
- * Nitrogen Reproducibility: $\pm 0.1\%$ RSD
- * Nitrogen Recovery: $> 99.5\%$

STAINLESS STEEL STEAM GENERATOR

- * High grade Stainless steel non corrosive steam generator
- * Borosilicate external water level view window
- * Built in steam generator with separate line for deionized / distilled water or tap water.
- * Adjustable Steam power: 10-100%
- * Proven SAFE pressure equilibrium technique
- * Non corrosive Nylocast Tube Rest
- * Over temperature sensor with auto cut off feature.
- * Over pressure release safety port for safe operation
- * Heater Power: 1500 Watts
- * Distilled water automatically drawn from 5 Litre Storage reservoir through inbuilt centrifugal pump
- * Steam Compensation: Automatic Replacement of steam by a balancer device by pressure equilibrium technique.
- * Instant Steam - Stand by - Ready Mode by electronically controlled preheating for quick steam injection.
- * Auto Ready Signal for Steam processing.
- * Automatic heater cut off & protection device during low level indication to avoid dry heating.

FULLY AUTOMATIC WATER LEVEL MONITORING

- * Water level visual view window
- * Auto electronic Micro switch controller for water level sensing coupled to balancing mechanism
- * Automatic Low water level acoustic alarm with LED indication
- * Auto refilling mechanism to maintain water level with centrifugal refilling pump

COOLING CONDENSER:

- * Individual tap water source to condensor,
- * Robust metallic condensor
- * Robust unbreakable metallic condensor
- * Auto Water saving mechanism by electronically controlled solenoid valve
- * Allows water to flow through condensor only during steam process.
- * Inlet water pressure: 2 Bar
- * Cold water consumption: 2 Litre / minute at water temperature of 30°C , 1 Litre / minute at water temperature of 15°C (During distillation process)

AUTO TITRATION CONNECTIVITY HARDWARE KIT

- * Intelligent sensor to sense process over indication
- * Provision for online external titration connectivity for future upgradation

- * 4 pin socket for auto online titration connectivity for future upgradation.
- * Enables online direct external titration connectivity feature
- * Incorporates cables to integrate external titration with superior electrical trigger kit
- * Intelligent hardware to initiate trigger signal to kick start titration operation for online titration when connected to a external titrator.
- * Avoids need of manual sample change over
- * If connected to Auto titrator, titration continues in sequence without the need of transferring sample from distillation to titration system

MICRO BRILLIANT DISTILLATE CONTROL

- * Auto selection of volume of distillate according to type of analysis
- * Incorporates automatic distillate control facility in which predefined volume of distillate can be set in the system at the receiver end. The Distillation process will stop automatically on completion of predefined volume
- * Superior electronics coupled with feather touch key integrated with capacitive sensor for distillate control.

PERISTALTIC PUMP FOR ADDITION OF REAGENTS

- * Peristaltic pump delivers accurate & precise quantity of reagents
- * Uses Silicon hose to compress against a rotor for creating suction
- * The reagents do not come into contact with any metallic parts
- * The body, rotor and the pump head are made of anticorrosive Nylocast material for long life
- * Individual pumps for each reagents (Alkali, Boric Acid & KMnO_4)

OTHER STANDARD FEATURES:

- * MicroBrilliant Processor with Feathertouch Membrane keys
- * Auto / Manual operation of all parameters
- * Alkali Resistant Borosilicate Splash head with technopolymer insert
- * Unique Expansion vessel for leak proof steam transfer and reagent splashing with non corrosive technopolymer inserts
- * Transparent protective window to view reaction in distillation process and Splash head.
- * MS housing with Anti corrosive Powder coated finish
- * Distillation Capacity: 15-20 Samples / hr.
- * Distillation Time : 3 to 5 minutes per sample (depending on type of sample)
- * Designed to accommodate Kjeldahl flask and Versatile to accommodate borosilicate digestion / distillation tubes of capacity 100ml Micro / 250ml Macro / 400ml / 800ml
- * Includes all essential accessories for full fledged working of system * Power: 220 -230V Single phase 50Hz AC

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- › DELHI › JAMMU › BHAGALPUR › CUTTACK › HYDERABAD
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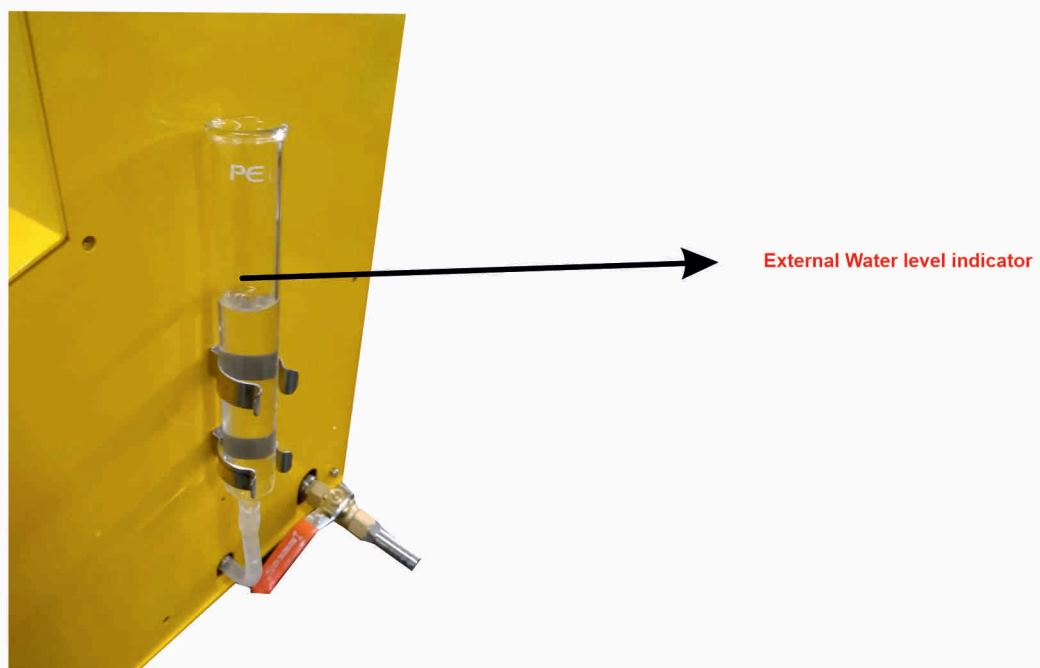
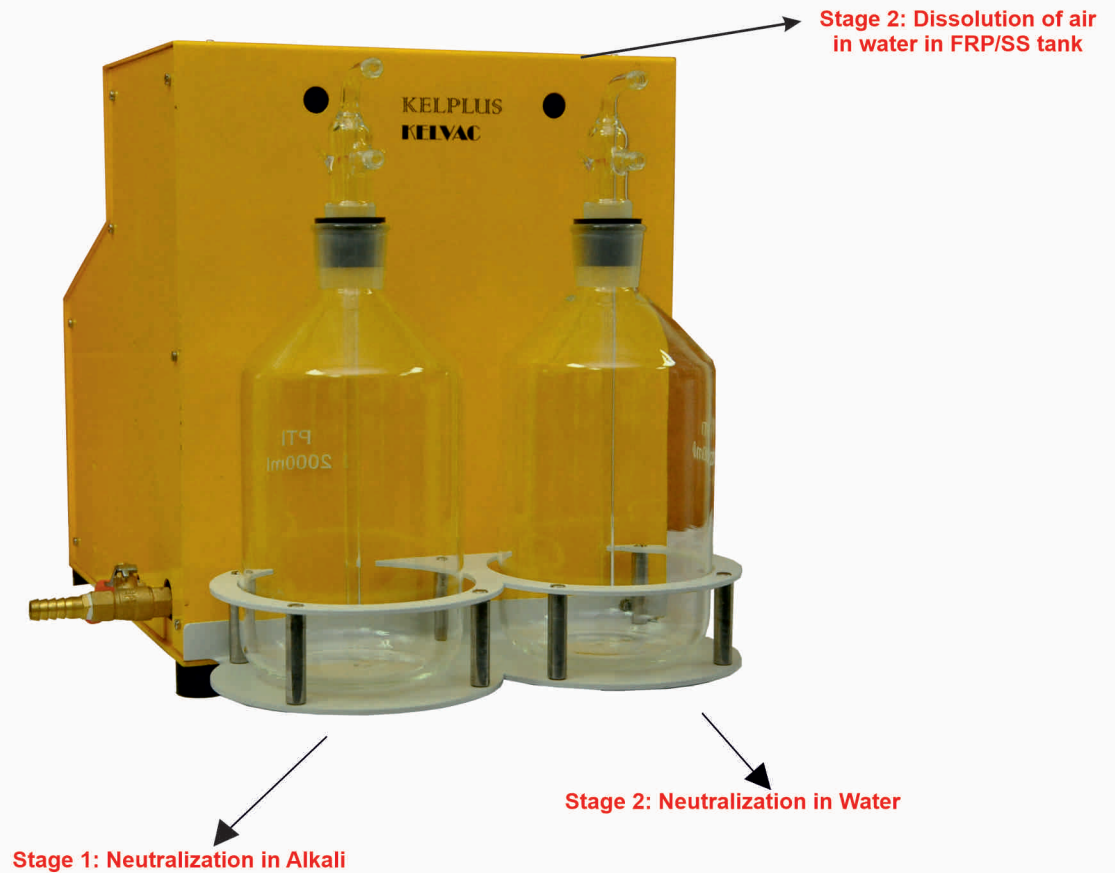
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THREE STAGE WATER SAVING ACID NEUTRALIZER SCRUBBER FOR COMPLETE REMOVAL OF FUMES



MODEL : KEL VAC

TECHNICAL DATA

(ISO 9001 : 2015 CERTIFIED & CE CERTIFIED/GOI-NSIC REGISTERED ORGANIZATION)

KEL PLUS ACID NEUTRALIZER SCRUBBER SYSTEM TO NEUTRALIZE HARMFUL GAS

KEL VAC - THREE STAGE WATER SAVING ACID NEUTRALIZER SCRUBBER FOR COMPLETE REMOVAL OF FUMES

First Stage	: Alkali (15% NaOH)
Second Stage	: Water
Third Stage	: Dissolution of air free of acid fumes in raw tank water
Vaccum source	: Giant Aspirator Pump
Tank Capacity	: 8 Litres
Alkali & Water Container Capacity	: 2Litres
Outer Cover	: MS Powder Coated
Tank	: Fibre Reinforced Plastic/ Stainless Steel tank
Recirculation Pump	: Non corrosive centrifugal inbuilt magnetic suction pump with inbuilt self priming feed pump for water recirculation in 8ltrs tank avoids requirements of running water during digestion * Automatic water level indicator to view water level in FRP/SS tank externally * Motor capacity : 30 ltr / hour
Electrical requirement	: 230v / 50 Hz AC Mains



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