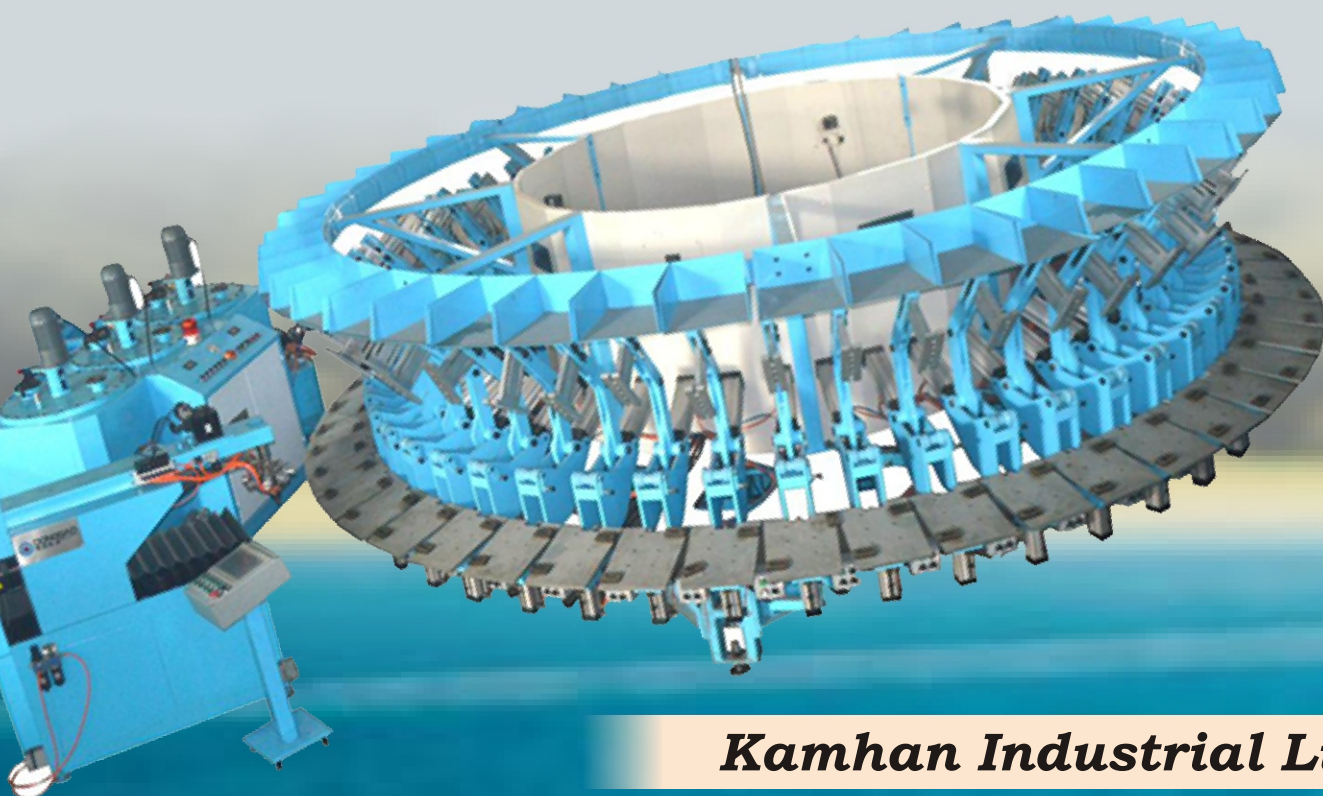




 **KAMHAN**



***Kamhan Industrial Limited***





# KAM HAN INDUSTRIAL LTD.

Room 1012-13 Beverley Commercial Centre, 87-105 Chatham Road, Tsim Sha Tsui, Kowloon, Hong Kong,

## QUALITY MANAGEMENT SYSTEM CERTIFICATE

Certificate Number: SW21Q20278R0S

This is to Certify that the Quality Management System of

Organization Code/Unified Social Credit Code: 91330282066639237L

Registration Address : Room 1012-13 Beverley Commercial Centre, 87-105 Chatham Road,  
Tsim Sha Tsui, Kowloon, Hong Kong,

Production/Business Address: Room 1012-13 Beverley Commercial Centre, 87-105 Chatham Road,  
Tsim Sha Tsui, Kowloon, Hong Kong,

Has been Audited to Conform to the Following Quality

Management System Standard:

**GB/T19001-2016/ISO9001:2015**

for the Scope of Registration:

**Design, Development, Manufacturing and After-Sale Services of Computerized Flat  
Knitting Machine.**

(Issued By)

Date of Issue: Apr 02, 2024

Date of Expiry: Apr 01, 2027



中国认可  
国际互认  
管理体系  
MANAGEMENT SYSTEM  
CNAS C201-M



A surveillance audit must be carried out every 12 months within the three-year validity period. Also, it is only valid along  
the anniversary confirmation. Effectiveness of the certificate, you can search CNCA website: [www.cnca.gov.cn](http://www.cnca.gov.cn) or scanning QR



# Certificate of Conformity



**Certificate No.:** YRT201710202C  
**Applicant:** KAM HAN INDUSTRIAL LTD.  
**Address:** Room 1012-13 Beverley Commercial Centre, 87-105  
Chatham Road, Tsim Sha Tsui, Kowloon, Hong Kong,  
**Manufacturer:** KAM HAN INDUSTRIAL LTD.  
**Address:** Room 1012-13 Beverley Commercial Centre, 87-105  
Chatham Road, Tsim Sha Tsui, Kowloon, Hong Kong,  
**Product:** Martindale Abrasion Tester  
**Model:** HD-P306, HD-P306-1, HD-P306-2, HD-P306-4, HD-P306-6, HD-P306-8  
**Brand Name:**  KAMHAN  
**Report No.:** YRT201710202E

The submitted products have been tested by us with listed standards and found in compliance with the following European Directives:

**The EMC Directive 2014/30/EU**  
**EN 61000-6-3:2007+A1:2011+A2:2012**  
**EN 61000-6-1:2016**  
**EN 61000-3-2:2006+A1:2009+A2:2016**  
**EN 61000-3-3:2013**

The test were performed in normal operation mode. The test results apply only to the particular sample tested and to the specific tests carried out. This certificate applies specifically to the sample investigated in our test reference number only.

The CE marking as shown below can be affixed on the product after preparation of necessary technical documentation.

Other relevant Directives have to be observed.



Approved by: \_\_\_\_\_

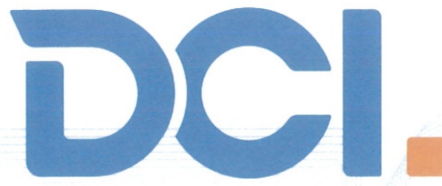


**Department Manager**  
**October 17, 2017**

**SHENZHEN YARUI TESTING CO., LTD.**

Address: No. 620 HuaYuan Commercial Center, No. 347 XiXiang Road, XiXiang Town, Bao'An District, ShenZhen City  
Tel.: +86-755-27912080 Fax.: +86-755-27916936 Website: [www.yarui-lab.com](http://www.yarui-lab.com)





# QUALITY MANAGEMENT SYSTEM CERTIFICATE

This is to Certify that the QUALITY MANAGEMENT SYSTEM of

## KAM HAN INDUSTRIAL LTD.

Registered Address : Room 1012-13 Beverley Commercial Centre, 87-105 Chatham Road,  
Tsim Sha Tsui, Kowloon, Hong Kong,

Audit Address : Room 1012-13 Beverley Commercial Centre, 87-105 Chatham Road,  
Tsim Sha Tsui, Kowloon, Hong Kong,

has been assessed by DCI Certification Service and found to comply with

### GB/T 19001-2016 idt ISO9001:2015

for the

Manufacture and sales of Leather Testing Equipment, Shoe Testing Equipment, Shoe Manufacturing Machine,  
Textile Manufacturing Machine, Various Laboratory & Testing Equipment and Environmental Testing equipment

**Certificate Number:** 130843  
**Unified Social Credit Code:** 91441900665019662G  
**Initial Certification Date:** 22 May. 2013

**Surveillance Audit Pass Label:**



**Certification Manager**



**Certificate Issue Date: 09 Jul. 2023**

**Certificate Expiry Date: 09 Jul. 2026**

This certificate is issued by DCI Certification Ltd, The certificate holder shall perform the supervision and audit in accordance with the certification and accreditation rules and the certification contract, and affix a surveillance audit pass label to maintain the validity of certificate. To verify the validity of certificate, please visit our website ([www.dci-global.com.cn](http://www.dci-global.com.cn)) or scan the QR code above by WeChat, or visit the CNCA website. ([www.cnca.gov.cn](http://www.cnca.gov.cn)).

1F, Building 5, No. 169, Lianchuan Road, Minhang District, Shanghai

Email: [info@dciglobal.com.cn](mailto:info@dciglobal.com.cn)



# **LOT 1 Procurement of Leather Physical Testing Machine**

## **1. Tensile Testing Machine**

Universal Computerized Servo Tensile & Compression Testing Machine

Model: HD-B604-S Enhanced Series

Application: Suitable for testing and analyzing mechanical properties of a wide variety of materials including plastic films, flexible packaging, rubber, paper, adhesives, textiles, corrugated cartons, hollow containers, and more.

Load cells: Compressive sensor at least 20.0 KN Circular Type, stable against transversal forces min class I Test area at least.

400 x 1400 mm Display Device PC; touch screen

Automatically detection of the adjustment and calibration by electronic system and Software continuous speed up to maximum force from 0.001 up to (500 + 10) mm/min

Machine operates: tension and compression

Tensile grips: 1 gram to 2 meganewtons

Accuracy; grade 1 from 80 N on grade 0.5 from 400 N on Mounting stud diameter 36 mm or capable

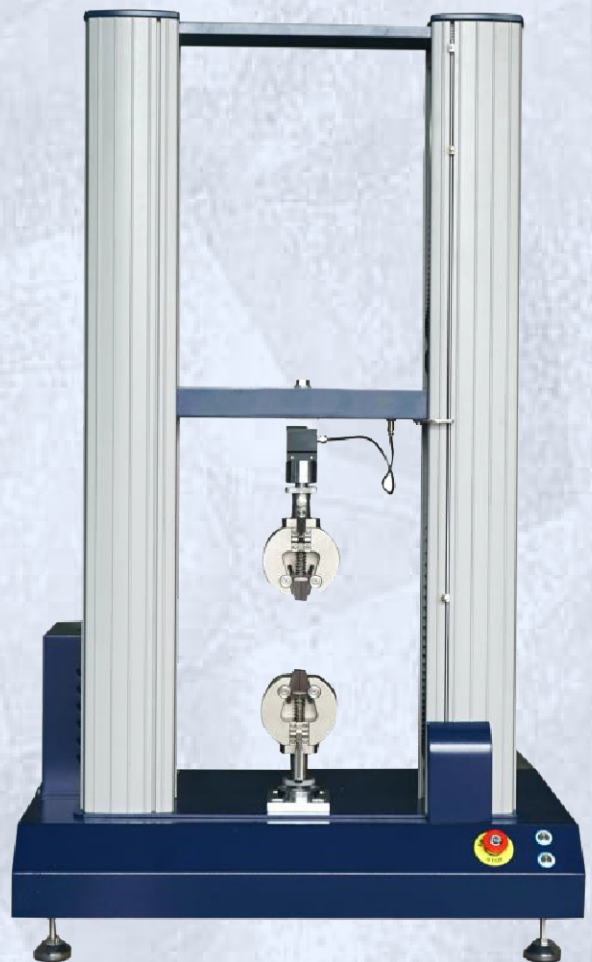
Extensometer; Accuracy Class 1 regarding EN ISO 9513

Accessories; Cutting die for single edge tear as per ISO 3377-1:2011

Cutting die for double edge tear as per ISO 3377-2:2013

Cutting die for tensile and percentage extension as per ISO 3376:2011

- Clamps/grips to test: Tensile, Compression, Peel, Tear, Bend, Shear, Friction, Puncture, Static testing
- Vernier Calipers: digital, Battery operated (Button cells), LCD Display, Accuracy of 0.01mm Options Metric (mm) and British(Inch) units, Jaws for measuring internal diameter of 150 mm, Jaws for measuring external diameter of 150 mm, Blade for measuring depth of 150 mm, Display On / Off control switch Zero setting switch for self-calibration
- Electrical Supply connections: matching to Ethiopian Supplies ( 230 volts/50hz)
- Installation , commissioning & basic Operational Training includes the following aspects, Use of the equipment, Calibration procedures, External maintenance of the equipment, Safety procedure, in-house or at site at least for 2 technicians





# LOT 1 Procurement of Leather Physical Testing Machine

## 2. Ball Burst Tester/ Lasto Meter

Model:HD-P813

Application: Designed to determine the distension and burst strength of the grain layer of leather and similar flexible materials. Complies with ISO 3379-1:2015 standards for surface distension and bursting strength.

Control mode: touch screen control,

Steel Ball diameter: 6.25mm,

Clamp diameter: 25mm,

Testing Speed: (12±2) mm/min,

Specimen diameter: 44.5mm,

Maximum Load: 1000N , 50/60HZ,

Dimension 54X47X52 cm,

Accessories; Cutting die for distension and strength of surface

(Ball burst)as Per ISO 3379-1:2015, (Circular with a diameter of d= 44.5mm), rigid, and flat material



## 3. Flex Resistance Tester Flexor Meter (bally)

Model:HD-P301

Application: Designed to assess the flexing resistance of leather, lining, coated fabrics, and similar flexible materials under repeated mechanical stress. Complies with international methods such as ISO 5402, IUP 20, and relevant industry standards.

No.of.Cycle: 100 cycles/min ± 5 cycles/min,

Test position: 12 sets, flexing angle:  $22.5^\circ \pm 0.5^\circ$ ,

Flexing speed:  $100 \pm 5$  cycles / flexes per minutes,

LCD Counter: 0 to 999999 (adjustable),

Sample size:  $70 \pm 5 \times 45 \pm 5$  mm,

Dimension (L x W x H) mm: (950 x 600 x 500) mm,

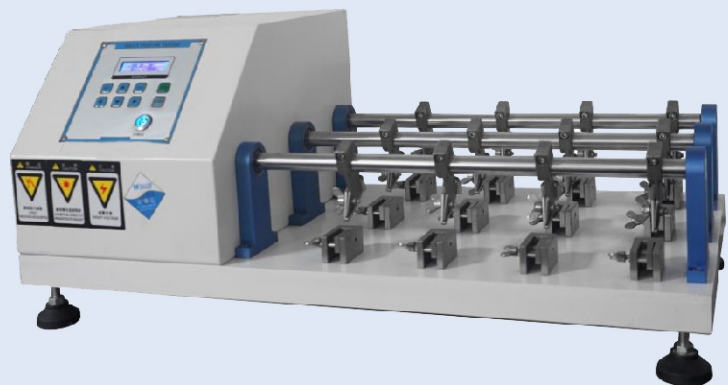
Weight: 60 to 85kgs.

The machine should have at least 12 stations and leather upper clamp consisting of a pivoting pair of flat plates of maximum 4mm thickness

Accessories; Cutting die ;Inner wall is a rectangular ( $70\text{mm} \pm 1\text{mm}$ )X ( $45\text{mm} \pm 1\text{mm}$ / as sample size),

Laboratory Desiccator : DURAN, Vacuum Desiccator

with NOVUS standard ground joint (NS 24/29) junction tube in the lid, stopcock and flat flange, Vacuum-tight made from DURAN® borosilicate glass and volume 0.7-1 lit. Magnifier: magnification of 25 times, Allen key (No 5 ),Metal clip 70mm wide, mandrel of 10mm and a minimum length of 70mm, 10 Glass dishes with minimum diameter 100mm and minimum depth 25mm.





# **LOT 1 Procurement of Leather Physical Testing Machine**

## **4. Water Vapor Permeability Tester**

Model:HD-E702-150-K40

Application: Designed to determine the water vapour permeability (WVP) of footwear upper materials, including vamp and lining, under controlled laboratory conditions. Complies with ISO 20344 Section 6.6 and ISO 5403:2011.

Number of bottle: 6 jar, Number of station: 6,

Fan Speed:  $(1400 \pm 100)$  r/min

Bottle Diameter:  $(30 \pm 1)$  mm

Bottle Rotate Speed:  $(75 \pm 5)$  r/min

Distance From Bottle Mouth to Fan:  $(10 \pm 5)$  mm

Consumables; Circular Re-genera table

Silica gel, particle size 2mm (5 kg)

Abrasive paper (50pcs), grade P180

Accessories

Analytical Balance: weighing to 0.001g,

Max capacity 2kg

Stop clock : Reading to 1min

Vernier caliper: 0.1mm measuring the internal diameter

Cutting die :- as Per ISO 5403 : 2011 (Inner wall of which is a rectangular (100mm long X 20 mm wide)

Testing station: 4 station

Counter LCD: 0 ~ 999,999

Timer LCD: from 0 to 999,999



## **5. Resistance To Water Penetration To Leather-penetrometer Tester**

Model:HD-P46B

Application

This tester is used to determine the resistance to water penetration of shoe upper materials such as leather, synthetic leather, and fabrics. The test involves immersing the specimen in water while flexing it at a constant rate, simulating real-world wear conditions. It complies with ISO 20344:2011, Section 6.13 Determination of Water Penetration and Water Absorption for Upper Materials.

Volume: 50x 42x 39cm

number of cylinder: four cylinders,

diameter:  $30.0 \pm 0.5$  mm,

crank motion:  $50 \pm 5$  cycles/minute,

amplitude:  $1.0 \pm 0.1$  mm;  $1.5 \pm 0.15$  mm;  $2.0 \pm 0.2$  mm;

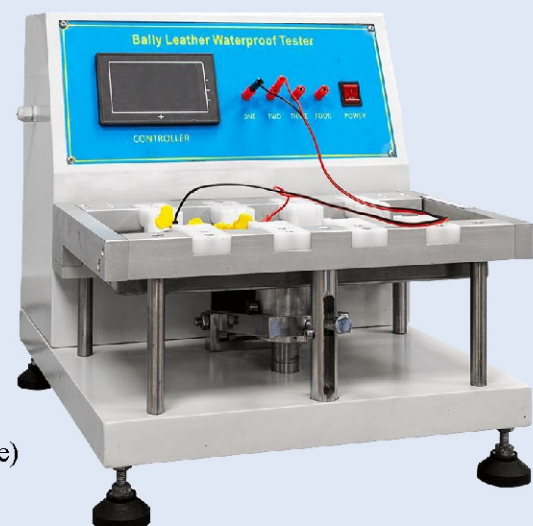
$3.0 \pm 0.3$  mm;  $(4.0 \pm 0.4)$  mm; or  $6.0 \pm 0.6$  mm )

Accessories; Absorbent cloth 5 pcs:

i.e. 100% cotton and weighing about 300g/m<sup>2</sup> with manufacturer certificate.

Cutting die :- as Per ISO 5403 : 2011

(Inner wall of which is a rectangular (100mm long X 20 mm wide)





# LOT 1 Procurement of Leather Physical Testing Machine

## 6. Martindale Abrasion Test Machine

Model: HD-P306-6

Application: Abrasion & Pilling Resistance Testing for Fabrics, Leather, Footwear, Gloves

Number of station: 8 stations

Drive system: PLC programmable Touch-screen control,  
rotational speed:  $47.5 \pm 2.5$  r/min, specimen holder:  $189 \pm 2$  gm

Longitudinal orientation:  $24 \pm 0.5$  mm

A type friction head:  $28.65 \pm 0.05$  mm

B type friction head:  $90 \pm 0.10$  mm

Weight of holder and spindle:  $200 \pm 1$  g, Cutting device shall be round with diameter 180 mm Cutting device diameter with 38 mm Horizontal orientation:  $60.5 \pm 0.5$  mm, Specimen holder with additional weights with weight ( $595 \pm 7$ ) g (pressure on sample 9 kPa), Specimen holder with additional weights with weight ( $795 \pm 7$ ) g (pressure on sample 12 kPa), weight ( $2.5 \pm 0.5$ ) kg with a diameter of ( $120 \pm 10$ ) mm

Consumption items for training for footwear: Crossbred worsted spun; plain woven fabric mass per Unit area  $> 195$  g/m<sup>2</sup> Woven felt mounted under abrading Diameter at least ( $125 \pm 5$ ) mm

(fitting to Martindale abrasion machine abrading base), Mass per Unit area ( $750 \pm 50$ ) g/m, Thickness ( $3.0 \pm 0.5$ ) mm

Consumption items for training for glove; abrading glass paper reg. EN ISO 388:2003 clause 6.1.2, Diameter 38 mm (fitting to Martindale abrasion machine specimen holder)

Software with license for unlimited usage

### Remarks

Electrical Supply connections: matching to Ethiopian Supplies (230 volts/50hz), System function at 230 volts/50hz

Warranty: 2 years

Documentations in English language covers;

User Manual Instructions for routine use and maintenance, Statement of performance characteristics, Health and Safety Information (optional), Service and Maintenance Manual





# **LOT 2 Procurement Of Foot Wear Physical Testing Machine**

## **1. Sole Materials Abrasion Machine**

Sample load 2.5N, 5N, 10N

Stroke 40m or 20m

Roller speed  $40 \pm 1$  r/min

Roller length 460mm

Testing angle :  $3^\circ$  the angle of the specimen

back shaft with vertical roller face

Grinding Wheel: # 40

Diameter of grind Wheel :  $150\text{mm} \pm 0.2\text{mm}$

Dimension : WXD<sub>X</sub>H 65X45X45 CM

Counter : LCD displayer 6 digit, auto brake device

Power consumption : 400w

Consumable; 30 pcs of Abrasive cloth made with aluminum oxide

of grain size 60, at least 400mm wide, 473 mm long and 1mm average thickness, the surface shall cause a mass loss between 180mg and 220mg for an abrasion distance of 40m.

100 pcs of Standard Rubber- in accordance of ISO4649:1985

Dimension: 183x183 mm, Thickness minimum 8mm

Accessories; Cutting die /hollow drill-/Cylindrical in shape, of diameter  $16\text{mm} \pm 0.2\text{mm}$ , with a minimum height of 6mm, Analytical Balance - Accuracy  $\pm 1\text{mg}$ , capacity 1kg



## **2. Whole Sole Flexing Machine**

Model: HD-P805

Application: Flex Resistance Testing for Shoe Outsoles

Standards: ISO 17707, SATRA TM161, EN 344, GB/T 20991

clamp at least 3 test places

Number of flex: 140 flexes per minute

Bending angle: 90 degrees, Flexing mode vertical type

Bending speed: 125-150/min (Speed adjustable),

Diameter of mandrel: 30mm,

Width of clamp: 144mm,

Counter: LCD 0-999999,

Contemporary test: 3 Samples,

Sole Flexibility Tester: 0-50N,

Accessories: 2 pcs of Chisel (Cutting tool), to pierce the outsole, the dimension in accordance ISO 17707:2012

2 pcs of Mandrel of diameter  $(30 \pm 0.1)\text{mm}$

2 pcs of Optical magnifier, traveling microscope or graduated probe and optical magnifier with 0.1mm accuracy.

All necessary spare parts kit for running the instrument and maintenance (i.e. set of Allen key).





## LOT 2 Procurement Of Foot Wear Physical Testing Machine

### 3. Shoe Lace Abrasion Machine (lace To Eyelet And Lace To Lace Method)

Model:HD-P310

#### Product Description

The Shoe Lace Abrasion Tester is designed to evaluate the abrasion resistance and durability of shoe laces under repeated motion through eyelets and against other laces. It simulates real-life conditions to assess how long a lace can withstand friction before failure, making it ideal for quality assurance in footwear manufacturing.

Number of stations: six (Sampling: 6 group)

Weight capable of applying a tensioning force of 4.46N to the lace move each lace a distance of 75mm through the eyelet at 100 cycles per minute.

Weight: 455±5g, Stroke: 76±2 mm,

Eyelets Φ: Standard eyelets, with characteristics of Construction visible (standard /flat) type, brass, Nominal internal barrel diameter:4.5mm, Nominal overall length:5.5mm

Speed: 100±5 times/min,

Fiber board (L x W x T): (25 × 25 × 3) mm,

a set of movable clamps at 280 ± 50 mm minimum separation 310 (D) for maximum separation of 35 ± 5mm to one side of stationary clamp apply,

force of 2.45 ± 0.03N (50 ± 3 g) vertically from lower end of the lace.

Movable clamp moves a distance of 35 ± 2mm at a rate of 60 ± 6 cycles/minutes.

Accessories: all necessary spare parts kit for running the instrument and maintenance.



### 4. Bata Belt Sole Flexing Machine

Model:HD-P255

#### Product Description

The Bata Belt Sole Flexing Machine is designed to simulate the natural flexing action of a human foot while walking. This enables accurate testing of sole flexing durability and resistance under repeated stress, helping manufacturers ensure product quality. It allows for simultaneous testing of multiple soles and includes programmable digital controls for efficient test monitoring.

Belt Dimension: Length: 1930±50mm, Width: 140±5mm,

Speed: 90±8 cycles/min,

Big Wheel Diameter: 225±5mm,

Small Wheel Diameter: 60±0.5mm, 90±0.5mm, 120±0.5mm,

Capacity: Max 6 sole, Counter: Touch Screen, 0-999,999,

Noise: 67 db, motor driving the larger roller at a speed of 247 rev./min. programmable digital counter, canvas belt, 3 interchangeable rollers (60,90,120 mm).

Force of (2000 ± 200) N. The corresponding across-the belt values are (14±) % and (750±50) N.

#### Accessories:

Flexible Continuous belt of cotton canvas (1930+/- 50)mm and width (140 ±5)mm - 20pcs

Cotton canvas - 2 ply 100% cotton having a mass per area of (500±25)g/m<sup>2</sup> the extension at break along the belt of (14±2)% at a breaking

PU Adhesive - 10L





## LOT 2 Procurement Of Foot Wear Physical Testing Machine

### 5. Whole Shoe Flexing Machine (Dry & Wet)

Model:HD-P824

#### Product Description

This machine is designed to evaluate the dynamic waterproof performance and flexing durability of a wide range of finished footwear under both dry and wet conditions. By simulating the natural walking motion at controlled flexing angles and frequencies, it measures the water resistance and mechanical endurance of the shoe structure. The dual-station design with independent controls enhances testing efficiency and precision.

#### Applications

- Waterproof performance testing of shoes
- Flexing endurance under dry and wet conditions
- Suitable for leather shoes, sports shoes, safety footwear, and more

Angle of flex: 10°,15°,20°,25°,30°,35°,45°,50°

Machine: robust and non-corrosive

Station: twin station

Number of tanks:two separate tanks

Flex: two independent flexing mechanisms and each station have an independent control for both dry and wet flexing.

All necessary spare parts should be supplied to run the machine in both dry and wet condition.



#### Remarks :

Electrical Supply connections: matching to Ethiopian Supplies ( 230 volts/50hz),System function at 230 volts/50hz

Warranty: 2 years

Documentation in English language covers;

User Manual Instructions for routine use and maintenance, Statement of performance characteristics, Health and Safety Information (optional), Service and Maintenance Manual



# Lot 03: Procurement of Leather Physical Testing Equipment

## 1. Digital Durometer

Model: MS-554-DSHT

Multi-Scale (A/B/C/D/DO/O)

### Product Description

This precision instrument is designed to measure the hardness of rubber, plastic, and other elastomeric materials across multiple Shore scales. It offers high accuracy and ergonomic design in a durable, portable format, making it ideal for both laboratory and field use.

Resolution: Half of one degree,

Shore hardness scale: (shore A.. shore C. shore D.,)

Range: 0 to 100,

Material: Stainless steel and Anodized Aluminum,

Weight: 230gr, it is convenient storage/protective case.



## 2. Digital Thickness Gauge

Model: HD-A833-6High-Precision Digital Thickness Tester (12" / 300 mm Jaw Depth)

### Product Description

This precision digital thickness gauge is designed to measure the thickness of materials like leather, artificial leather, PU, PVC, and other flexible or semi-rigid materials. Featuring a large jaw depth, high-resolution digital readout, and robust construction, it ensures accurate, reliable, and easy-to-read measurements for both laboratory and industrial quality control applications.

This hardness tester is suitable for Low hardness plastics, leather, all kinds of rubber, multi-resin, wax and other hardness testing equipment

Dial values: 0~100 HA, 0~100 HC, 0~100HD

measuring range: 10~90 HA, 10~90 HC, 20~90HD

Pressure needle stroke: 2.5 mm,

Pieces of the pressure needle size:  $\phi 0.79\text{mm}$ , SR0.1mm

Weight: 0.2 kg





# Lot 03: Procurement of Leather Physical Testing Equipment

## 3. Color Fastness Rubbing Tester

Model: HD-W804 Colour fastness rubbing tester

### Product Description

This electric colour fastness rubbing tester is designed to evaluate the resistance of textiles, leather, and other materials to color transfer via rubbing both in dry and wet conditions. Using a motorized double-cone friction system, the test simulates real-life wear conditions to assess the durability of surface color. Equipped with digital control, precise test force, and compliance with international standards, this tester ensures accurate and repeatable results.

Type : Double Cone electric MOTOR,

Heavy load: 9N

Friction Speed: 60spm

Friction distance: 100mm

Friction cone: 16mm

Counter: 0 ~ 999,999 times, Volume: 58 × 55 × 38cm

Test table: 26 × 18 cm, Control Box Size: 19 × 19 × 16cm,

Test piece: 140 × 50mm. Motor: 1 / 4HP Accessories; Gray scale for assessing change in color in accordance with ISO 105-A02:2013

Gray scale for assessing staining in accordance with ISO

105-A03:2013, Light Cabinet, Using illumination according to

ISO 105-A01 Consumables ;Rubbing material:- Square pieces of white

wool felt: measuring approximately 15mm x15mm punched out of a

sheet of pure wool felt meeting the following specification: □PH of water extracted between 4.5 and 8.0 according to ISO 4045

Mass per unit area: 1 900g/m<sup>2</sup> ± 150 g/m<sup>2</sup> Thickness, determined in accordance with ISO 9073-2, methode A: 6.0mm ± 0.5mm



## 4. Leather Shrinkage Tester

Model: HD-P245 Shrinkage Temperature Testing Apparatus

### Product Description

The Leather Shrinkage Tester is designed to determine the shrinkage temperature of leather in accordance with international testing standards. It operates by immersing leather specimens in water and gradually increasing the temperature until a sudden shrinkage occurs. This test helps assess the thermal stability and heat resistance of various types of leather, crucial for footwear, upholstery, automotive, and industrial applications.

Temperature up to 100 °C Beaker: Volume 1000ml, Depth: 140mm

Temperature rising rate: 2 °C/ min

Temperature difference: ≤1 °C

Sample size: (50±2) x (3±0.2)mm or (50±2) x (2±0.2)mm

Accessories; Distiller Conforming to the requirements of grade 3 of ISO

3696:1987 Heater Capable of heating the vessel heating filled to its working

depth within distilled or deionizer water at a rate of 20°C ± 0.2 0.20°C/min Stirrer

Capable of sufficient agitating the water in the vessel such that the temperature at the top and bottom of the test pieces do not differ by more than 1 °C. Glass

test tube , with internal diameter 10mm ± 2mm and minimum height 100mm





## Lot 03: Procurement of Leather Physical Testing Equipment

### 5. Light Cabinet For Color Assessment

Model: HD-G818 Light cabinet for colour assessment

#### Product Description

The Light Cabinet for Colour Assessment is designed for precise visual evaluation of colour under controlled lighting conditions. It is essential in industries where colour consistency is critical such as textiles, leather, footwear, cosmetics, automotive, and packaging.

The cabinet simulates various lighting environments to detect metamerism and ensures accurate colour matching between products and client samples.

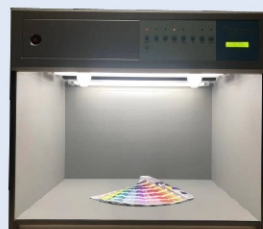
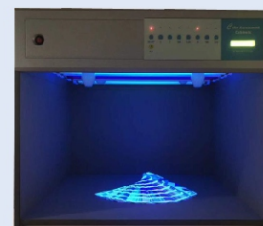
Lamp: 26 mm or 38 mm lamps

Specimen table angle: 45° angle

Gray scale: stain assessment grey scale(1)

Gray scale: color assessment grey Scale(1)

Standard lamps (Color temperature approx.): D65 Artificial daylight (1 Level) 6500°K, TL84 Point of sale lighting 4000°K,



### 6. Leather Softness Tester

Model: HD-P807 Leather softness tester

#### Product Description

The Leather Softness Tester is designed to measure the softness and flexibility of natural or synthetic leathers. It provides accurate, repeatable readings, helping quality control personnel determine softness uniformity across a single piece or batch of leather. This instrument is indispensable for footwear, upholstery, automotive, and leather goods industries where consistent tactile properties are critical.



Load (530 ± 10) g

Dial Scale (0.1 ~ 10) mm

Testing mode: Digital weight; 5.3kg Dimensions 140 x 500 x 170mm ( L x W x H)

#### Remarks :

Electrical Supply connections: matching to Ethiopian Supplies ( 230 volts/50hz), System function at 230 volts/50hz

Warranty: 2 years

Documentations in English language covers;

User Manual Instructions for routine use and maintenance, Statement of performance characteristics, Health and Safety Information (optional), Service and Maintenance Manual



## Lot 04: Procurement of Footwear Physical Testing Equipment

### 1. Sole Adhesion Tester

Model: HD-P818 Sole Adhesion Tester

#### Product Description

The Sole Adhesion Tester is designed to evaluate the adhesive strength between the upper and sole of footwear. It supports both toe and heel adhesion tests by applying a controlled force to detach the sole from the upper. This test helps ensure the durability and bonding quality of footwear products, in compliance with international testing standards.

Detachable horizontally mounted toe pieces of thickness  $10 \pm 1$  mm, total arc length of  $22 \pm 1$  mm, edge of the arc shape tapered with a bevel of approximately  $45^\circ$  to the upper surface. force to the metal plate in an upwards direction ;  $\pm 5\%$ .  
force range: Toe adhesion tests 0 to 450N,  
Heel adhesion tests 0 to 900N,  
Toe adhesion - an anvil of width greater than 75 mm,  
Heel adhesion tests 0 to 900N.

center of the fulcrum approximately 45 mm from the center of the arc in the toe piece, height of the fulcrum in relation to the toe piece adjustable to cope with different sole and heel thicknesses.



### 2. Digital Last Assessment Jig

Model: HD-844-DLAJ Digital Last Assessment Jig

#### Product Description

The Digital Last Assessment Jig is a precision-engineered instrument used to evaluate the structural and dimensional properties of footwear lasts. This device facilitates detailed digital measurements and mechanical assessments for both toe and heel pressure zones, providing essential data for last design, modification, and quality control.

Two digital readouts on both left and right foot lasts,  
Two built-in digital slides at the appropriate datum position.  
incorporates an angled measurement device  
separate pair of digital calipers and a toe spring gauge should be supplied. Material: Aluminum and clear plastic sheet,  
Dimensions LxWxH, 50 x 30 x 20 cm,  
Weight: 10 kg, Digital caliper: with a digital display to measure up to 0.01 mm (0.0005 inches).





## Lot 04: Procurement of Footwear Physical Testing Equipment

### 3. Foot Size Stick

Model: HD-847-FSS Foot Size Stick

#### Product Description

The Foot Size Stick is a precision measuring tool shaped like a calliper, specifically designed for accurate foot size assessment across men's, women's, and children's footwear. With dual measurement scales in English shoe sizes and millimeters, it ensures accurate and consistent foot sizing in retail, fitting rooms, and manufacturing settings.

Shaped like a caliper,

should have dual scales,

English shoe sizes and millimeters.

Scales on the size stick are adjusted to measure feet in this way.

Both left and right feet can be measured using the device and the scales are so angled that either scale can be easily read.

The size stick is easy to use simply place the fixed anvil behind the heel and move the sliding caliper up to the longest toe and read the indicated size.



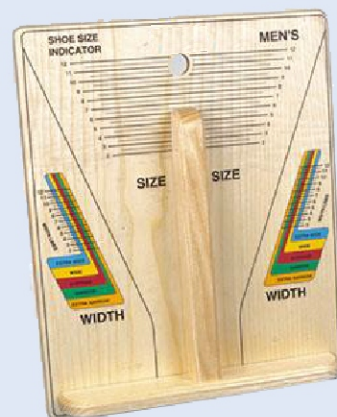
### 4. Fitting Board (Shoe Size Indicator)

Model: HD-850-FB Fitting Board (Multi-Coloured Shoe Size & Width Fitting Guide)

#### Product Description

The Fitting Board is an essential tool for footwear retailers, designed to quickly determine the most suitable shoe size and width fitting for customers. It features multi-coloured width bands combined with clear size markings, enabling fast and accurate assessment. Available in separate versions for men, women, and children, the board helps improve fit accuracy and customer satisfaction.

Multi-colored width bands coupled with size marking. Width fittings arranged in five unique bands: Extra narrow, Extra wide, Wide, Average, Narrow. There are three standard fitting boards to cover the men's, women's and children's size ranges: Men's shoe sizes, Women's shoe size, Children's shoe sizes. It incorporates specific size ranges, width fittings, colors. Scales: shoe sizes and fitting, Material: Medium Density Fiberboard, reconstituted wood, Color: Multi-colored Weight: 500 gms.





## Lot 04: Procurement of Footwear Physical Testing Equipment

### 5. Shoe Quarter And Back Height Gauge

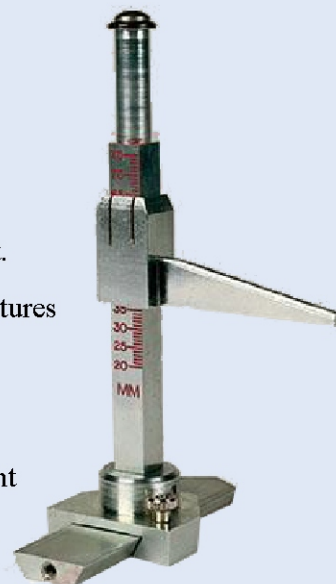
Model: HD-852-SQBHG Shoe Quarter and Back Height Gauge

(Dual-Side Adjustable Measurement Tool)

#### Product Description

This precision instrument is designed to measure the height of the top-line of a shoe at the back and at the quarters above the insole surface at the seat. Correct quarter and back height are essential for ensuring shoe comfort, support, and fit. If the back height is too low, heel slippage may occur; if the quarters are too high, ankle irritation can result. This gauge enables accurate assessment across all shoe sizes and includes adjustable features to accommodate both left and right shoes.

Should be changeable to measure left and right shoes as required. gauge placed inside a shoe on the insole at the seat. Supply with full instructions and tables giving measurement positions for adults' as well as children's shoes. It is nickel plated to prevent corrosion. Scales: centimeters and millimeters, Material: nickel, Weight: 250 gms.



### 6. Internal Shoe Size Gauge

Model: HD-858-ISSG Internal Shoe Size Gauge

(Multi-Scale Stainless Steel Footwear Sizer)

#### Product Description

The Internal Shoe Size Gauge is a practical and precise tool used to determine the actual internal size of footwear. It is especially useful for verifying the fit accuracy of finished shoes. The device consists of a flat insertion bar and a movable curved slider, which measures the longest internal length from toe to heel. It is suitable for both adult and children's footwear, with multiple versions offering readings in English shoe sizes and millimetres. four versions of the internal shoe size gauge which cover the adults' sizes 11-14 and children's sizes 3-7, Adults' scale in English sizes, Adult's scale in millimeters, Children's scale in English sizes, Children's scale in millimeters. Scales: English shoe sizes and millimeters, Material: stainless steel, Weight: each 250 gms.





## Lot 04: Procurement of Footwear Physical Testing Equipment

### 7. Heel Height Measuring Gauge

Model: HD-864-HHMG Heel Height Measuring Gauge / Precision Last Heel Height Ruler

#### Product Description

The Heel Height Measuring Gauge is specifically designed to measure the height of the heel on footwear lasts with accuracy and ease. It provides a simple yet effective method to ensure consistency in last design and heel fitting. Suitable for use in footwear design, production, and quality control, this tool is essential for confirming that heel heights meet product specifications.



Heel height measuring gauge designed to measure the height of heel on the last. Measure in mm/cm (scale). Measure 1 to 11 cm heel height of last, made up of plastics. Material: HDPE Plastics, Color: white, Scale: 1 to 11 cm (each scale 5mm), Weight: 500 gms.

#### Remarks

Electrical Supply connections: matching to Ethiopian Supplies ( 230 volts/50hz), System function at 230 volts/50hz

Warranty: 2 years

Documentations in English language covers;

User Manual Instructions for routine use and maintenance, Statement of performance characteristics, Health and Safety Information (optional), Service and Maintenance Manual





## LOT 5: Procurement of General Laboratory Machines

### 1. Motorized Vacuum Former

Model: HD-872-MVF Motorised Vacuum Former (Precision Single-Bladder Vacuum Press)

#### Product Description

The Motorised Vacuum Former is an advanced, compact forming system designed for creating precise pullover shells on lasts using PU/PVC foil. Ideal for professional shoe model-making and orthotic labs, this system ensures tight, seamless bonding with efficient sealing and controlled heating. It features a unique perimeter airflow, secure locking handle, and quick-release bladder frame for superior usability and consistent forming quality.

#### Technical Specifications

Parameter	Specification
Vacuum System	Single bladder with unique perimeter airflow
Frame Mechanism	Quick-release bladder frame with locking handle
Seal Control	Locking handle assures perfect vacuum seal
Pressure Control	Built-in pressure relief valve
Working Surface	A3 Size 297 × 420 mm
Internal Dimensions	L: 432 mm × W: 254 mm × H: 76 mm
External Dimensions	L: 635 mm × W: 420 mm × H: 178 mm
Vacuum Depth	70 mm
Forming Material	PU/PVC foil (2 to 3 mm thickness)
Heating Temperature	Adjustable: 0°C to 300°C
Power Consumption	500 W
Weight	2025 kg

#### Key Features

- **Compact A3-Sized Working Surface:** Ideal for forming last shells and prototypes.
- **Efficient Vacuum System:** Ensures deep forming with a 70mm vacuum depth.
- **Adjustable Heating:** Controlled temperature up to 300°C for flexible material compatibility.
- **Quick Setup & Operation:** Features a fast-release frame and secure sealing mechanism.
- **Durable Build:** Designed for frequent use in professional and educational environments.

#### Applications

- Forming pullover shells on shoe lasts
- Thermoforming of orthotic and insole materials
- Sample model creation for footwear design
- Use with PU and PVC sheets





## LOT 5: Procurement of General Laboratory Machines

### 2. Foot Arch Measuring 3d Scanner

Model: HD-EMX-FootScan-F2 Foot 3D Scanner

#### Product Description

The Foot Arch Measuring 3D Scanner is a high-precision vertical scanning system engineered to capture detailed 3D representations of the human foot, including arch contours. It combines fast scanning speed, excellent mesh accuracy, and powerful analysis software, making it ideal for orthotics design, footwear fitting, medical diagnostics, and biomechanics research.

#### Technical Specifications

##### Parameter Specification

Scanner Type	Vertical
Working System	Foot 3D Scanner V5.0
Scanning Speed	58 seconds (one-way), max 20 seconds full scan
3D Accuracy	$\pm 0.3$ mm to $\pm 0.5$ mm
Scan Volume	$350 \times 170 \times 150$ mm
Data Output Formats	ASC, STL, OBJ
Colour Depth	64-bit
Sensors	Capacitive sensor array for high-resolution scanning
Electronics	Embedded microelectronics for precise measurement
Software	Graphical & statistical foot pressure and arch analysis software
Display	Interface Integrated touch screen
Dimensions (L×W×H)	$570 \times 390 \times 310$ mm
Weight	70 100 kg

#### Key Features

- **Fast & Accurate Scanning:** Captures a clean 3D mesh in under 10 seconds with high fidelity.
- **High Resolution:**  $\pm 0.3$  to  $0.5$  mm accuracy ensures reliability for clinical and manufacturing use.
- **Advanced Software:** Provides detailed analysis of foot structure, pressure distribution, and arch profiling.
- **Versatile File Output:** Compatible with standard 3D formats (ASC, OBJ, STL) for CAD/CAM and modeling systems.
- **Touchscreen Control:** Intuitive operation with integrated display and controls.

#### Applications

- Orthotic insole design and customization
- Footwear design and sizing
- Medical and orthopedic diagnostics
- Biomechanical and sports analysis





## LOT 5: Procurement of General Laboratory Machines

### 3. Electronic Weighting Machine

Model: HD-A838 Electronic weighting machine (Density meter)

#### Product Description

This high-precision electronic weighing machine is specifically designed for measuring the density and specific gravity of solids and liquids, including materials such as rubber, plastic, wire, glass, alloys, and more. It offers both air and liquid weighing modes, making it ideal for laboratories and quality control departments involved in material characterization and product testing.

#### Technical Specifications

Density Resolution	0.0001 g/cm <sup>3</sup>
Weighing Range	0.005 g 600 g
Measurable Weight (High Precision)	0.0001 g 300 g
Density Measurement Range	0.001 99.999 g/cm <sup>3</sup>
Minimum Readability	0.01 g / 0.005 g
Measurement Modes	Solid Mode / Liquid Mode
Indications Displayed	- Weight in Air - Weight in Water - Specific Gravity
Sink Size (Integrated Moulding)	165 × 115 × 85 mm
Sensor Dimensions	175 × 130 × 110 mm
Water Tank Dimensions	154 × 108 × 88 mm
Measuring Tray Size	128 × 82 mm
Wind Shield	Airtight anti-draft shield included



#### Key Features

- Dual Mode Operation: Capable of measuring both solids and liquids with high accuracy.
- Precise Gravity Display: Offers accurate readings of mass in air, in water, and density value.
- Built-in Molded Water Sink: Integrated design for enhanced stability and durability.
- Wide Application Range: Suitable for diverse materials across various industries.
- Easy Calibration & Operation: User-friendly interface for fast setup and measurement.
- Protective Shielding: Airtight wind shield ensures environmental stability for precision weighing.

#### Applications

- Rubber & Plastic Manufacturing
- Wire and Cable Testing
- Electrical Appliance Quality Control
- Sports Equipment and Footwear Industries
- Hard Alloy & Glass Density Testing
- Research Labs & Material Science



# LOT 5: Procurement of General Laboratory Machines

## 4. Air Conditioner System

Model: 1.5-Ton Inverter Split Air Conditioner Colour: White

### Product Description

This high-efficiency 1.5-ton inverter split air conditioner is ideal for laboratory environments with dimensions up to 9.25 m x 5 m x 4.2 m. Equipped with advanced cooling technology and intelligent operation modes, it ensures optimal climate control with quiet operation and superior air quality.

### Technical Specifications

Parameter	Specification
Type	Wall-Mount Split AC
Capacity	1.5 Ton
Cooling Technology	5-in-1 Convertible Cooling Modes
Compressor Type	Inverter Compressor (variable speed, energy-efficient, low noise)
Condenser Coil	100% Copper (for better cooling and durability)
Cooling Capacity	Suitable for lab size: 9.25 x 5 x 4.2 m
Energy Efficiency	Highly energy efficient with adaptive cooling
Air Filtration	-Easy Filter Plus (Anti-Bacterial) - Air Purification System - Auto Clean (Self-Cleaning)
Special Features	- Filter Cleaning Indicator - Indoor Temperature Display - Display On/Off - Beep Sound On/Off - 24-Hour Timer - Auto Restart
Operating Modes	- Auto Mode - Fast Cool - Good Sleep - Dehumidification - Fan Mode - Quiet Mode
Color	White
Mounting Type	Wall-Mount
Noise Level	Low Noise Operation
Warranty	Manufacturer's Warranty as per model & brand



### Key Highlights

- Inverter Technology: Smart compressor adapts to heat load for energy savings and consistent cooling.
- Air Quality Assurance: Anti-bacterial filter and auto-cleaning technology maintain hygiene.
- Silent Operation: Designed for low-noise performance, ideal for lab environments.
- Smart Display & Controls: Control display and sound indicators, with timer and restart features.
- 5-in-1 Convertible Modes: Tailor cooling performance to room load and personal comfort.



## LOT 5: Procurement of General Laboratory Machines

### 5. Shoe Upper Knitting Machine

Model: HD-854-SUKM High-Precision Multi-Gauge Flat Knitting System

#### Product Overview

This advanced Shoe Upper Knitting Machine is designed for efficient, high-speed production of shoe uppers with complex patterns and structural designs. It offers superior control, flexibility, and connectivity for smart manufacturing integration.

Gauge/System : Raynen system

Needle Bed : 72 inch, use the JiLin needle bed, one of the best quality needle bed in China

Cam : Beworth cam

Sensor : ShangHai SONON, one of the best in China

Machine Frame : Each frame have at least 3 years of aging treatment

Knitting Speed : Controlled by servo motor, 36 level selection, Max speed is 1.2m/sec. The knitting speed is varified according to Guage and knitting condition.

Racking : AC Servo motor controlling machanism. Max 2 inch racking. With the fine adjusting function

Stitch density : Controlled by Stepper motor. 36 level for stitch selection. 0-650 adjusting range

Transfer : Combined design, enable single/double system work independantly. One cam system transfer, while other system keep knitting.

Sinker system : Controlled by stepper motor, Adjustable for different knitwear, achieving various effect of narrowing and widening.

Comb device : Without comb

Take down system : Main roller, 32 levvel selectable, adjusting rane from 0-100

Color changing system : To control 8 units of adjustable yarn feeders.

Protection system : The machine can automatic stop and alarm during the operation if these situation happens. Yarn break, knot, flotting yarn, back roll, finish of piece count, racking fail to return, needle shock, programme error etc. The pattern can be automatically saved when power is off accidentally, and resume to knit after re-start the machine.

Password can be set according to customer's requirements.

Control system : 1. LCD industrial display panel. The language can be customized according to customer's requirement.

2. USB port, 256 M memory capacity.

3. Can display various parameters, which can be adjustable during operation

4. Use intelligent carriage box (CAN bus technology), adopt HengQiang pattern design software.

Power : 1500 W power consumption. With advanced CMOS technology, enabling instant memory when power is accidently off.





LOT 5: Procurement of General Laboratory Machines

6. Digital Laboratory Oven

Model: HD-877-DLO Laboratory water distillation apparatus

Product Overview

This Digital Laboratory Oven is a compact, high-performance heating solution designed for drying, curing, and heat treatment in scientific, industrial, and quality control environments. Engineered for reliability and precision, it ensures uniform temperature distribution with tight control, ideal for consistent and repeatable results.

Technical Specifications

Parameter	Details
Capacity	45 Litres
Volume	1.5 Cubic Feet
Temperature Range	Ambient to 300 °C
Temperature Uniformity	±2.5 °C
Temperature Fluctuation	±1 °C
Temperature Resolution	0.1 °C
Tray Maximum Loading	15 kg per tray
Tray Spacing	6 cm
Door Style	Side-open hinged door with secure latch
Outer Shell Material	Corrosion-resistant Stainless Steel
Chamber Material	Aluminum-coated Mild Steel
Body Finish	Easy-clean, powder-coated exterior



Features

- High Precision Temperature Control: Suitable for sensitive experiments and drying processes
- Excellent Uniformity: Maintains even heating across chamber volume
- Durable Construction: Stainless steel shell resists corrosion and harsh lab conditions
- Optimized Air Circulation: Promotes consistent thermal performance
- User-Friendly Operation: Digital control panel with clear temperature display
- Safety Assured: Over-temperature protection for user and sample safety

Applications

Ideal for:

- Research laboratories
- Quality control departments
- Electronics and plastic industries
- Textile and material testing
- Drying glassware and instruments



LOT 5: Procurement of General Laboratory Machines

7. Laboratory Water Distillation Apparatus

Model: HD-878-LWDA Laboratory water distillation apparatus

Product Overview

This Laboratory Water Distillation Apparatus is designed to produce high-purity distilled water for a wide range of laboratory and analytical applications. It utilizes high-grade stainless steel construction and electric heating elements to ensure efficient and reliable operation with excellent corrosion and aging resistance.

Technical Specifications

Parameter	Details
Distilled Water Output	20 Litres per batch / cycle
Cooling Water Consumption Ratio	1:8.5 (Distilled Water : Cooling Water)
Heating Source	Stainless Steel Electro-Thermal Electric Heating Tube
Construction Material	High-Quality Stainless Steel Plate
Corrosion Resistance	Excellent Ideal for long-term usage in harsh laboratory environments
Aging Resistance	High Durable and long-lasting performance

Features

- High Output Capacity: Delivers 20 litres of high-purity distilled water per cycle
- Efficient Cooling System: Maintains optimal condensation efficiency
- Stainless Steel Build: Rust-proof and easy to clean for long-term usability
- Energy-Efficient Heating: Fast heating using stainless steel electric heating tubes
- Safe & Reliable: Designed for consistent operation and minimal maintenance
- Compact Design: Space-saving unit fits easily into standard laboratory setups

Applications

- Clinical and diagnostic labs
- Research and development facilities
- Chemistry and biology labs
- Educational institutions
- Industrial quality testing







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