

品質、技術、服務



高分子物性化性試驗機系列

VARIOUS POLYMER PHYSICAL & CHEMICAL PROPERTIES TESTING MACHINES



適用行業

橡膠、塑膠、高分子聚合物、紡織品、合成化學製品、汽機車零件、紡紗、皮革製品……等。

DESIGNED FOR TESTING

RUBBER · PLASTICS · POLYMER · TEXTILE · COMPOUND CHEMICAL PRODUCTS ·
AUTO PARTS · YARN · LEATHERS...ETC.

C COMPANY PROFILE

品管儀器的先驅

弘達自1975年9月成立以來，一直秉持著誠意、技術、服務的經營理念，專業於品管儀器的開發與研究。

鑑於「品質管理」是國際性產品的必然趨勢，弘達汲汲於鑽營電腦輔助機械設計及電子計測製造中心，30餘年以來，終於成功開發了將近 1000 種各類的試驗儀器。

弘達研製的試驗機適用之工業包括：橡膠、塑膠、鞋業、造紙包裝業、機械五金業、建材業、汽車零件業、電線電纜業。適用產品如：自行車、摩托車、球拍、球棒、高爾夫球桿、建築五金材料、鋼筋混凝土、橋樑、電線光纖、電纜、紡織、染整、作材料物性檢驗及環境試驗。

弘達也總代理國外數家知名品牌之品管儀器。弘達獲得度量衡國家檢校體系檢校實驗室認可。(力校正實驗室編號：0002)，並可對外校正及檢驗，使產品之精確、技術獲得更高的信賴與肯定。

HUNG TA INSTRUMENT CO., LTD., a pioneer in manufacturing quality control instruments, was established in September 1975. Our CAD-CAM and R&D center is fully equipped to ensure products of advanced technology, state of art knowhow in order to meet our company's strict policy of reliability, tenacity of purpose and good after sales service.

In order to comply with world wide requirement of quality control management, our R&D department has spared no effort in developing up to 200 types of various reliable testing instruments.

Our range of testing equipments are suitable for quality control of products of various fields, including rubber, plastic, shoe manufacturing, paper and pulp industries, machinery and hardware, construction industries, automobile parts, electrical wire and cable. They meet the needs of testing products like automobile, motorcycle, rackets, clubs, hardware items, reinforced concrete, bridge, optical fiber, cable, textile, dyeing and finishing, as well as environmental test equipments.

We also represent a number of reputable quality control equipments manufactured by renown American and European producers.

We are proud to be the only Taiwanese manufacturer approved by the Economic Department of National Calibration and Service Division of Taiwan as an laboratory for inspection and calibration (calibration cert. No.0002). Furthermore, we issue certificates recognized by the government.

本公司保有變更設計及外觀色彩的權利，如有更改不另行通知。

NOTE: The specifications and color of painting are subject to change without prior notice.



合作產品 Joint Product



力校正實驗室及檢測實驗室
The force calibration laboratory & inspection laboratory



電腦軟體及機械設計中心
Computer aided design center



電子計測系統製造中心
Electronic measuring system manufacturing center



展示測試中心
Show room & testing center



展示測試中心
Show room & testing center



- ▲ 國家國家檢校體系力校正實驗室證書及容量0 - 2000KN 符合ISO GUIDE 17025
- ▲ Force calibration laboratory approved by CNLA, ISO GUIDE 17025



- 通過 ISO-9001 國際品質認證 - 證書號碼 Q10161
- Quality Management System accredited by ISO-9001 with the Certification No. Q10161



HT-8756P 電腦式砷比試驗機
Computer Type Disk Rheometer



HT-2101 電腦伺服油壓萬能材料試驗機 (開口式)
Computer-Control Servo Hydraulic Universal Testing Machine (Open front-law)



HT-2402 電腦伺服控制材料試驗機
Computer Servo Control Materials Testing Systems



HT-9770 自動化靜態標準級力量標準機
High Precision Automatic Dead Weight Primary Force Calibrator (50 KN - 2000 KN)

← 2000 KN



← 50 KN

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H T-8752

HT-8752 MOONEY VISCOMETER 木尼試驗機

ASTM D1646,BS1673,ISO-289,JIS-K6300

AND CNS-10273,10274

■ 本機係用來測試天然橡膠的特性，可測試木尼黏化及木尼燒焦。全電腦控制，可顯示之數值包括TQ3,TQ5,TQ18,TQ35,TS1及TS2。

■ The mooney viscometer is specially designed to measure Mooney viscosity and Mooney scorch. It is fully computerized with user friendly software.

自動量測系統 AUTO MEASURING SYSTEM

1. 黏度感應器 strain gauge 式傳感器
2. 木尼黏度值校正 模糊邏輯電腦系統
3. 手動/自動互換操作系統 學習及操作十分方便
4. 全電腦式控制,下拉式選單,對話式顯示及控制系統
5. 測試過程全程監控- 所視及所得 並可自動計算列印及儲存 可呼叫所需曲線 4+1分鐘的黏度值及橡膠1分鐘的回復特性 橡膠燒焦 TQ3, TQ5, TQ18, TQ35, by TS1, TS2 的所需時間
6. 測試條件可儲存及呼叫以節省設定時間
7. 測試曲線之容許誤差可預設, 測試物品質可完全控制
8. 可呼叫任何曲線加以比較 並可顯示曲線上任何一點的黏度值
9. 多筆測試值可選取並求平均值
10. 可根據測試需求終止測試, 並求取測試資料- 或僅僅取消測試

1. Viscosity detector: strain gauge type transducer.
2. Calibration of Mooney viscosity value: by fuzzy computer calibration system.
3. Manual/automatic operation interchangeable, easy to learn and operate.
4. Full computer control, drop down combo box, conversational display & control system with Chinese/English version.
5. Monitoring the whole test process. What you see, what you get. Auto calculating, printing and saving. It can recall required curves, the viscosity value of 1+4 minutes, the recovering characters of rubber for 1 minute, the rubber scorch acquiring time of TQ3, TQ5, TQ18, TQ35 by TS1, TS2.
6. Test terms could be saved and recalled to save the time of setting.
7. Permitted deviation of test curve could be presetted, and the quality of specimen material would be fully controlled.
8. It could recall any or some testing curve to compare. And display the viscosity value and time of any point on the curve.
9. It could choose some testing values and get the average.
10. It could end test according to test requirements and get the test information, or just to cancel this test.



HT-8752 木尼試驗機
MOONEY VISCOMETER

型式 Model	HMV-200
參考標準	ASTM,D1646,BS1673,ISO,R289
Available Standard	JIS K6300,CNS 10723,10274
木尼黏度 Mooney viscosity	最大200M, Max.200M
溫度範圍 Temperature	最大200°C, Max.200 Degree Celsius
壓力系統 Pressure System	空壓(空氣壓縮機) Pneumatic (Air Compressor)
加熱系統 Heating System	電熱式, Electrical Heater
試片尺寸 Specimen Dimension(mm)	約 45x9~12 (直徑x厚度) Approx 45x9-12(dia x thickness)
轉子 Rotor	L 型及 S 型 L type and S type
Rotor Retreating	Automatic
轉子速度 Rotor Rotation Speed	2 +/-0.02rpm
壓盤壓力 Die Pressure	約Approx 1173+/-581kg
驅動馬達 Drive Motor	25w,200/220V,50/60HZ,1500/1800rpm
電熱片 Heater	嵌入是環狀電熱片, 550W, 2 組 Embedded Ring Heater,550W,2 Sets
選用設備 Optional	列表機 空氣壓縮機 Printer, Air compressor
工作壓力 Pneumatic Requirements	最大 7kgf/cm2 (bar), 一般3.8 kgf/cm2 Max.7 kgf/cm.sq(Bar) Generally 3.8kgf/cm.sq available
外型尺寸 Dimension	約Approx.800(W)x450(D) x 1300(H)mm
重量 Net Weight	約Approx.259kg
電源 Power supply	Max.AC220V,1.2KVA,50/60HZ

HT-8756P

HT-8756P AUTOMATIC DISK RHEOMETER

電腦式硫化試驗機

ASTM D-2084-79, BS1673 PART 10, ISO 3417

- 在傳統的橡膠製造工廠中，師傅經常靠著老練的經驗，調整橡膠配料來迎合模具厚度，或成形品軟硬度的要求。雖然經數次的調整，亦可達到目標，但過程中，除了浪費了寶貴的時間與物料外，是否已調得"最佳"配方，則不得而知。如今，藉著電腦軟體體的協助，由硫化試驗曲線的顯示，可讓一位新手，輕易調得合理的配料與最平衡的焦燒與硫化配方，既節省物料、時間，更可確保品質，一舉數得。此為本機對橡膠工業的最大貢獻。
- 加硫橡膠的最佳開模時間，在大量生產的過程當中，常需與品質控制相結合。本機利用電腦軟體的協助，輔以精密的機械結構，能將各種不同配方的加硫橡膠，求出其最佳開模時間。
- For traditional rubber manufacturing factories, a technician could always adjust the rubber components to meet the moulds' thickness or the hardness of molded products by his own experiences. He can achieve the target through several times of adjustment. However, during the process, not only he spent lots of precious time and materials, but also no one knows if the "best" adjustment for the components is reached. Now, through the help of computer hardware and software, and the test graph of Rheometer, even a fresh operator can easily get the best solution for reasonable components, best-balanced scorch and cure components. Besides saving materials and time, it also assures the quality. It is the best contribution this AUTOMATIC DISK RHEOMETER can do for rubber industry.
- Pre-production quality control plays an important role in rubber industry. With proper control, you can decide the best time for mould opening. This is the reason why Rheometer is gaining more importance in the field of basic research, raw material management, quality control and R&D.

HT-8756P 規格 SPECIFICATIONS

最大扭力 Max. torque	200 Lbf
扭力感測範圍 Torque. sensing range	25, 50, 100, 200 Lbf-in 4段 stages
溫度範圍 Temperature range	Rt~200°C
溫度控制 Temperature control	電腦控制，PID SCR控制，精度 ±0.1°C Micro-processor & computer control, PID & SCR control, accuracy ±0.1°C



HT-8756P 電腦式硫化試驗機
Automatic Disk Rheometer

空壓源 Air source	空壓機選用 Air compressor optional
加熱方式 Heating method	電熱 Electric
溫度檢出 Temperature sensor	PT 100 Ω
轉子 Rotor	高精度加工生產模式 MPC mode (Micro Production Control)
轉子夾持方式 Rotor clamping	空壓 Pneumatic
振動頻率 Vibration disk rotation frequency	100 cpm (1.67Hz)
振動角度 Vibration angle	±1° , ±3° , ±5°
測試時間 Test time	3~600 min 可任意設定 available to set
壓力 Pressure	氣動方式，壓力4.15kg/cm2 Pneumatic pressure 4.15kg/cm2
報告數據 Test data	Ts1, Ts2, Tc10, Tc50, Tc90, ML, MH
扭力校正 Torque calibration	標準扭力校正 Standard Torque Calibration
電源 Power	1Ø, 220V, 50/60Hz
材積(約) Dimensions (about)	132(W) × 62(D) × 116(H) cm
重量 Weight	200 kgs

H T-2131, HT-8022, HT-8621

HT-2131 MARTINDALE ABRASION TESTER MARTINDALE 耐摩擦試驗機

BS-3424, 5690

- 本機係用來測試襯裡、鞋類外層、類織物等相關產品的耐摩擦性。可同時測試四個試片。試片在固定荷重下，以可變化的方向與標準之砂布或砂紙作往復式的摩擦，完成所需之摩擦次數後，再評估其耐摩擦性之優劣。
- This is used to test the linings, upper materials or some similar samples for their abrasion resistance. Four samples can be tested at the same time. Under constant load, the samples are rubbed repeated against the standard abrasive cloth or paper in all directions. After testing, the sample can be evaluated for its character of abrasion resistance.

荷重 Load	595g, 795g
試片尺寸 Sample size	ø44 ±1mm × 4 個 pcs
計時器 Timer	六位數LCD數字顯示 6-digit LCD display
計數器 Counter	六位數LCD數字顯示 6-digit LCD display
電源 Power	1ø, 110/220V, 50/60Hz
重量 Weight	約 about 75 kgs
材積 Dimensions	57 ×57 ×32cm



HT-8022 AKRON ABRASION TESTER AKRON 耐摩擦試驗機

CNS 734 K6047 BS903

- 本機係藉由利用砒馬來測試大底輪胎或類似橡膠的產品的耐摩擦性。
- This tester is specially designed for testing the abrasion endurance of the sole, tire and the rubber-like products in combination with the use of reference weight.

試件尺寸 Specimen	外徑2.5" 厚度0.5" 內徑0.5" 硬度60~70度或 220(L)x127(W)x1.5(T)MM External diameter 21/2" Thickness 1/2" Internal Diameter 1/2" Hardness 60-70 degree or 220(L)x127(W)x1.5(T)mm
測試速度 Rotation speed	250±5 或 85±5 RPM RPM250 +/-5rpm or 85 +/-5rpm
砂輪 Grinding wheel	Dia. 150x 寬度 Width 38, 粒度 Sand grit #40
測試角度 A adjustable testing angles	0~45度可調 0 to 45 degrees
計數器 Counter	電子式六位數 6 digits(Electronic setting)
砒碼 Loading	2磅及6磅 Approx.0.45kg(2 pounds) or 2.73kg(6 pounds)
電源 Power Source	110v or 220v
材積 Dimensions	約 Appro 60(W)x45(D)x40(H)CM
重量 Net weight	約 60KGS Approx.60kgs

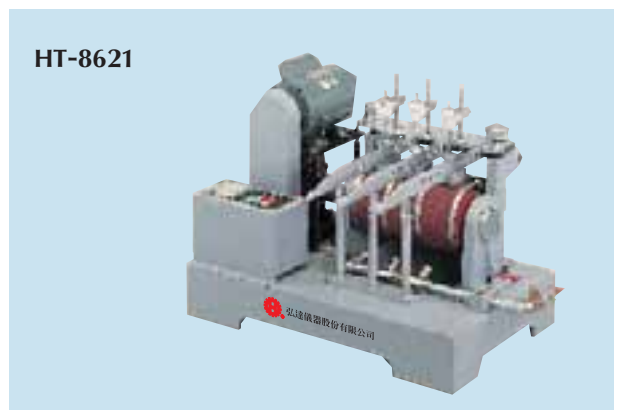


HT-8621 ABRASION RESISTANCE(NBS TYPE) TESTER NBS 磨耗試驗機

ASTM D1630

- 本機係用以測試加硫橡膠或其他橡膠製品混合物料的磨耗程度，如鞋底、鞋跟等。
- This tester is used to test the abrasion resistance of vulcanized rubber or other rubber compounds or both used for the soles and heels of footwear.

試片數 Specimen	3片 3pcs.
轉輪直徑 Diameter of rotation wheel	Ø150mm
試件尺寸 Specimen size	25.4x25.4x6mm
荷重 Loading	約 Appox.2265g
計數器 Counter	電子式六位數 6 digits(Electronic)
電源 Power source	220v or 110v
馬達 Motor	1/2HP
迴轉速度 Rotation Speed	45±5rpm
砂紙 Sand paper	Sand grits #40
空壓源 Pneumatic source	平均壓力 4kg/sq.cm Average 4kg/sq.cm
材積 Dimensions	710(L)x440(W)x560(H)mm
重量 Net weight	115kgs



H T-8621B, HT-8031A, HT-8357

HT-8621B ABRASION RESISTANCE (DIN TYPE) TESTER DIN 磨耗試驗機

DIN-53516, JIS-K6369

- 本機係依DIN標準製造。在磨耗輪滾動的情形下，試件在固定壓力下在覆有砂紙的磨耗輪來回走一次，記錄其磨耗情形。
- The equipment is designed according to "Din Standard". It is applicable to the comparative test of rubber abrasion on the circumference of grinding wheel which is covered with sand paper. The rubber specimen moves longitudinally to and fro on the rotating grinding wheel in order to measure the abrasive rate.

磨耗輪直徑 Grinding wheel diameter	150mm(a Circumference Approx.400mm)
試件尺寸 Specimen size	Ø16.2mmxThickness 6-10mm
試件移動速度 Speed of specimen	每轉4.2mm 4.2mm Per Revolution
荷重 Loading	0.25,0.5,1.0,1.5,2.0kgs
磨耗輪速度 Grinding wheel rotating speed	40rpm
電源 Power source	1Ø,110V/220V
材積 Dimensions(WxDxH)	約Approx.95cmx33cmx31cm
重量 Net weight	約Approx.50kgs

HT-8621B



HT-8031A DYEING RUBBING TESTER

染色耐摩擦試驗機

JIS-L0801,0823,0849,1006,1084,K6328,P8136

- 本機係於錘頭裹以乾或溼之白棉布，再施以砵碼荷重往復摩擦試件。取下白棉布與灰色標比較其灰化程度，藉以判斷試件染色之堅牢程度。
- Cover the rubbing hammer with dry & wet cotton cloth. Fixed requested load on the hammer and then rub the specimen for several times and compare with the gray scale.

試件尺寸 Specimen	22x3cm
白棉布尺寸 White cotton cloth	5x5cm
試驗速度 Rubbing speed	30cpm
錘重 Rubbing load	200g
砵碼重 Extra load	300g
摩擦錘尺寸 Rubbing hammer size 2x2cm(R)	45-50mm
白棉布 White cotton cloth	1cm ²
摩擦空間 Rubbing space	100mm
計數器 Counter	電子式6位數 Electronic type, auto stop
材積 Dimension	50x55x35cm
重量 Weight	58kg
電源 Power	1Ø, 220V

HT-8031A



HT-8357 UNIVERSAL WEARING TESTER

萬能磨耗試驗機

AATCC-119&120, ASTM D-3886, D-3514, D-3885, DRAFT 20-0-70

- 本機係多用途、高精度、可用來測試表面彎曲及邊端耐磨的特性。可測試的試件包括紡織、皮革、橡膠、塑膠及紙品、乾式、溼式均可測試。
- This machine is of multi-function and high precision for measuring the resistance to surface, flexing and edge abrasion of textile, leather, rubber, plastic and paper. Both wet and dry tests can be done.

拉緊砵碼 Tension Weight	2~1/2 lb, 2~1 lb, 1~2 lb
壓力範圍 Pressure Range	1~9 psi
平衡砵碼 Head Weight	2~1/2 lb, 2~1lb
行程 Table Stroke	約1" Approx. 1"
表面磨耗頭 Surface abrasion head	1 REV/Approx. 102 cycles
計數器 Counter	5 Figures
計時器 Timer	30 min
往復速度 Table Reciprocal Movement	120cycles/min
電源 Power	1Ø, 110V/220V
材積 Dimension	31(W)x65(D)x57(H)cm
重量 Weight	68kgs

HT-8357



H T-8360, HT-8361A, HT-8361B

HT-8360 TABER TYPE ABRASION TESTER

耐磨耗試驗機

CNS-3309, 6483, 8540, JIS-A1453, K6902, K6911, K7204, L1096, ASTM-D1175, D1044, TAPPIT476ts-63

- 本機係用於測試紙類、布類、油漆、合板、皮革、瓷磚、橡膠、塑膠等的磨耗試驗。
- 測試時將試件置於迴轉盤，而磨耗輪則加於試件之上，並在磨耗輪上放置規定之荷重法碼，啟動機器後使磨耗輪和試件相互磨擦，藉此計算試驗前後試件的耐磨耗程度。
- Used to test cloth, paper, paint, plywood, leather, tile, glass, rubber, etc. This machine tests the specimen by rotating the specimen itself while in contact with the grinding wheel, applying the required pressure. The loss of weight reflects the change in weight of the specimen before and after testing.

試件 Specimen	120 x 6.5 x 3mm(EX x IN x H)
砂輪 Grinding wheel	Diameter 2" x 1/2"
測試速度 Test speed	60, 70 rpm 可選 two sections
砝碼 Test load	250, 500, 1000g
計數器 Counter	電子式六位數 6 digits(electronic)
馬達 Motor	1/8HP
吸塵器 Vacuum cleaner	選用 AC 110v, 500w
電源 Power source	1Ø, 220v or 110v
材積 Dimensions	35(W)x35(D)x30(H)cm
重量 Net weight	約30kgs.

選擇砂輪 Choice of grinding wheel:

試片 Specimen	塗料 paint	磁磚 tile	三合板 plywood	塑膠 plastic
砂輪種類 Type of grinding wheel	CS10	CS17	S32	CS17
選配 Optional	CS17	S33	H18, H22	

吸塵器 Vacuum cleaner

HT-8360



HT-8361 CROCK METER 脫色程度試驗機

JIS L1084, L0851, K6328, AATCC 8-52

- 本機係用來測定染色之皮革、鞋面及紡織品在經過一定壓力及一定次數之磨擦後，其所呈現之脫色程度的記錄。
- The apparatus is used to carry out rubbing test and color fastness. The rubbing finger which is wrapped with a white cotton, being moved to and fro at a constant speed, and keeping closely contact with the lower bed. The judgement is made by observing the dirtiness of the white cotton.

型式 Model	(A)電動 Motor	(B)手動 Manual
磨擦桿 Rubbing shaft	2 set	1 set
速度 Rubbing speed	60 CPM	60 CPM
試件尺寸 Specimen	125 x 50 x 50mm	125 x 50 x 50mm
細布尺寸 Size of cloth	50 x 50mm	50 x 50mm
往復距離 Reciprocated distance	100 ± 1mm	100 ± 1mm
磨擦桿直徑 Diameter of rubbing shaft	16mm	16mm
砝碼 Load	900g	900g
計數器 Counter	電子式六位數 6 digits(electronic)	機械式 Counter
電源 Power supply	1Ø, 110/220V	
重量 Net weight	80kgs.(motor type)	15kgs.(manual type)
材積 Dimensions(W)x(D)x(H)	60x46x36cm	60x20x30cm

HT-8361A



HT-8361B



H T-8061A, HT-8062

HT-8061A FOAM RUBBER HARDNESS TESTER

泡棉壓縮應力試驗機

JIS-L0801,0823,0849,1006,1084,K6328,P8136

- 將試片置於上下壓盤間，壓縮試片原厚度之25%並停留20秒，記錄其荷重值。則其荷重值除以試片截其面積即為其壓縮應力。
- Put sample between both compression platen. Compress the sample to 25% of its original thickness and stay there for 20 seconds. Record the value of load. The value of its compression hardness is the value of load to be divided by the cross area of the sample.

容量 Capacity	100 kgs
試片尺寸 Sample size	50×50×25(T) mm
試片數 Number of samples	1pcs
垂直壓縮空間 Vertical clearance	20-100mm
壓縮速度 Speed of compression	10-60rpm 可調adjustable
壓板尺寸 Size of compression platen	300×300mm×1pc
上壓盤 Upper compression platen	排氣孔 ventilating holes ×289個 孔徑 hole diameter 6mm 孔距 distance of hole centers 19mm
下壓盤 Lower compression platen	V型排氣溝 V-shape groove 溝距 distance of groove 19mm
計數器 Counter	六位數 6-digit display
馬達 Motor	1 HP
電源 Power	1 phase, 220V, 5A
重量 Weight	65kg
體積 Dimensions	47(W)×47(D)×111(H)cm

HT-8061A



HT-8062 SPONGE REPETITIOUS COMPRESSION TESTER

泡棉往復疲勞試驗機

JIS-L0801,0823,0849,1006,1084,K6328,P8136

- 本機係用來測試泡棉壓縮永久變形率，藉以判斷其品質。先量取試片厚度 t_0 ，再將試片置於上下壓盤間，以60RPM（或依規定）之速度壓縮試片原厚度之50%，如此連續壓縮80,000次後，取下試片，並置放30分鐘，再量取其最終厚度 t_1 ，並求其永久壓縮變形率 tr 。公式

$$tr = \frac{t_0 - t_1}{t_0} \times 100\%$$

本機可同時測試兩個試片，可節省寶貴時間。

- This tester is used to test the permanent rate of deformation for the samples like sponges. Before testing, measure its original thickness as t_0 . Compress the sample to 50% of its original thickness at the speed of 60RPM (or as stipulated) for 80,000 cycles. Then, discharge the sample and let it calm down aside for at least 30 minutes. Measure its final thickness t_1 and calculate its permanent rate of deformation as the following formula:

$$tr = \frac{t_0 - t_1}{t_0} \times 100\%$$

This tester can test two samples at the same time in order to save time.

試片尺寸 Sample size	300×300×20(T) mm
試片數 Number of samples	2 pcs
垂直壓縮空間 Vertical clearance	20-100mm
壓縮速度 Speed of compression	10-60rpm 可調adjustable
壓板尺寸 Size of compression platen	300×300mm×2pcs
上壓盤 Upper compression platen	排氣孔 ventilating holes ×196個 孔徑 hole diameter 6mm 孔距 distance of hole centers 19mm
下壓盤 Lower compression platen	V型排氣溝 V-shape groove 溝距 distance of groove 19mm
計數器 Counter	六位數 6-digit display
馬達 Motor	1 HP
電源 Power	1 phase, 220V, 5A
重量 Weight	200kg
體積 Dimensions	90(W)×60(D)×150(H)cm

HT-8062



H T-8213, HT-8682, HT-8683

HT-8213 FLEXING & WATER PENETRATION TESTER 成品鞋防水曲折試驗機

STM D813, BS 903, JIS K6301, HG4-836, 837

- 本機係用來測試鞋子的耐浸漬及水中耐曲折等特性，可分為耐浸漬及水中耐曲折兩種功能。測試前先設定所須之時間或次數，到達時則自動停機。鞋內一裝有感應裝置，在有水滲入鞋內時會自動停止計次，並顯示曲折數。
- This is used to determine the character of shoe for its immerse in water or water resistance under flexing test. The flexing cycles or time can be preset and test can stop automatically after it reaches the preset numbers. It is equipped with a sensor inside the shoe so that when water slightly penetrates inside the shoe, the auto counter would stop counting and display the number of flexing.

測試範圍 Testing range	美規童鞋#12~成鞋#13 USA size from #12 for children up to #13 for adults
試片數 Number of sample	2 (分開感測 sensing separately)
彎曲速度 Flexing speed	60/80 rpm 切換 available to switch
彎曲角度 Flexing angle	0~45度可調 0~45 degrees adjustable
試驗室容量 Size of testing tank	15 公升 liters
計時器 Timer	六位數LCD數字顯示 6-digit LCD display
計數器 Counter	六位數LCD數字顯示 6-digit LCD display
馬達 Motor	1/2HP
電源 Power	1 ϕ , 110/220V, 50/60Hz
重量 Weight	150 Kgs
材積 Dimensions	81 x 58 x 136 cm

HT-8213



HT-8682 BENDING TESTER 耐彎曲試驗機

- 本機係用來模擬走路時腳部動作，鞋子受反覆的彎曲效果，來測試成品鞋的品質。
- To ensure the high quality of the finished products, this tester is used for testing endurance of the soles of rubber and plastic shoes after bending repeatedly.

Available specimen	2 pairs of shoes
試件數 Capacity	4支, 4 pieces
彎曲角度 Bending Angle	0~90° 可調, 0 to 90 degree (adjustable)
速度 Speed	80rpm
計數器 Counter	電子式六位數 6 digits (Electronic)
電源 Power Source	1 ϕ , 110v or 220v
材積 Dimensions (Approx.)	60x40x60cm
重量 Net Weight (Approx.)	70kgs

HT-8682



HT-8683 ROSS FLEXING TESTER 耐曲折試驗機

ASTM D1052

- 本機適用於各種橡膠製鞋底、PU等材料，在經過90° 彎折試驗後，觀察其受損及龜裂程度，以判斷材料的優劣。
- Repeated bending of rubber products will develop strain and cracks at right angle and gradually become too weak to be used. The testing method employed in this tester, is to match the conditions of reciprocal bending of sole.

曲折速度 Flexing speed	100 \pm 5cpm
曲折角度 Flexing angle	最大90° Max. 90 degree
曲折直徑 Flexing rod diameter	3/8"
試件尺寸 Specimen size (inch)	1+/-0.05(W)x6(L)x0.25(T)
試件治具 Specimen holder	6 holders
試件數 Available number of specimen	12pcs.
計數器 Counter	電子式六位數 6 digits
電源 Power	1 ϕ , 110v or 220v
材積 Dimensions (Approx.)	70(W)x42(D)x45(H)cm
重量 Net weight (Approx.)	60kgs.

HT-8683



H T-9492, HT-8643, HT-8021D

HT-9492 MAESER WATER PENETRATION TESTER

鞋面皮革動態防水性試驗機

ASTM D2099, SATRA PM-34, ALCA E56

- 本機係利用符合標準之鋼珠置於皮革內部，並依此作防水曲折測試。測試前先設定所須之次數，到達時則自動停機。同時本機配備有一感應裝置，在有水滲入時會自動停止計次，並顯示曲折數。
- This is used to test the water penetration resistance of upper leather material under flexing movement by placing standard magnetic steel balls into test sample. The flexing cycles can be preset and test can stop automatically after it reaches the preset numbers. It is equipped with a unique sensing system inside so that when water slightly penetrates inside the test sample, the auto counter would stop counting and display the number of flexing.

測試速度 Test speed	90 ± 5 rpm	
測試位移或角度 Test stroke or angle	1° 或 31 ± 1°	
試片數 Number of sample	4 組 4 pcs	
試片尺寸 Sample size	4" × 4" ± 0.125" (101.6 × 101.6 ± 3.2mm)	
荷重 Load	鋼珠尺寸 size of steel ball	(1/8" (3mm))
	鋼珠總重 total weight of steel ball	135 ± 5gs
計數器 Counter	六位數LCD數字顯示 6-digit LCD display	
馬達 Motor	200W	
電源 Power	1Ø, 220V, 50/60Hz	
重量 Weight	80 Kgs	
材積 Dimensions	76 × 50 × 45 cm	

HT-9492



HT-8643 BALLY LEATHERS FLEXING TESTER

皮革耐撓試驗機

CNS-7705, JIS-K6545

- 本機係用來測試在常溫下鞋面皮革、內襯、衣料或袋類材料的耐撓性，測試時以試件的一端表面做為內側，另一端為外側，上下往返將試件彎折至損壞，記錄其次數；或設定彎折次數，再取出觀察其損壞程度。
- This tester is to test the vamp, lining, clothing material, bags & handbags to their flexing resistance. Flexing back and forth till the specimen damaged.

試件數 Flexing grips	12組, 12 sets
彎折角度 Bending angle	22.5°, 22.5 degree
試件尺寸 Specimen size	70x45mm
速度 Speed	100cpm
計數器 Counter	電子式六位數 6 digits(Electronic)
電源 Power source	1Ø, 220v or 110v
馬達 Motor	1/2HP
材積 Dimensions	81x45x33cm
重量 Net weight(Approx.)	60kgs

HT-8643



HT-8021D Y.S.S. LEATHER BENDING TESTER

皮革屈曲試驗機

- 本機係用來測試皮革的耐屈曲特性，在屈曲規定的次數後，取下試件，觀察其龜裂或受損情形，據以判斷皮革的品質。
- This machine is used to perform leather bending test. After testing for a certain period of time, observe the leather if cracks or breaks to judge the quality of leather.

測試速度 Testing speed	240r.p.m.
試件數 Number of specimen	12p.c.s.
試件尺寸 Specimen size	40 × 40mm
計數器 Counter	電子式六位數 6 digits
馬達 Motor	1/2HP
電源 Power	1Ø, 110V/220V

HT-8021D



H T-8021, HT-8358, HT-9782

HT-8021 DEMATTIA FLEX-CRACKING TESTER 彎曲試驗機

JIS K6301, ASTM D813, D430, BS903

- 將試件置入夾具中以測試試件之耐彎曲特性，可測試之材料包括橡膠皮革、EVA及大底等。
- Fixed the specimen into the movable grips and flexed the specimen constantly to observe the resistance of cracking.
- In other words to measure its flex-endurance. This machine is suitable for flexing rubber, leather, and EVA soles etc.

測試速度 Flexing speed	300+/-10cpm
往復行程 Reciprocate stroke	19~75mm
試件數 Available number of specimen	3 pieces
試件尺寸 Specimen size	約Approx. 150(L)x25(W)x6(T)mm
計數器 Counter	電子式六位數 6 digits(Electronic setting)
馬達 Motor	1/2HP
電源 Electric source	110v or 220v
材積 Dimensions	約Approx. 35(W)x60(L)x70(H)cm
重量 Net weight	約Approx. 70kgs

HT-8358 SCOTT TYPE CREASE-FLEX ABRASION TESTER 耐揉試驗機

JIS L-1096, K-6328

- 本機係用來測試皮革、橡膠、布等材料之耐揉性，施荷重與試件上、夾具間距離及往復距離均可調整。荷重施加方式採彈簧式。
- This machine is to test the crease-flex abrasion resistance on leather, rubber cloth ...ect. The force loaded on specimen, distance between grips and the two-way distance can be adjustable. And the force loaded on specimen is of spring type.

試件尺寸 Specimen size	寬Width 30mmx 長 length 150mm
速度 Speed	120rpm
荷重 Load	0~5 kgf
最小刻度 Min. Graduation	500g
行程 Stroke	0~60 mm
計數器 Counter	4 位數 9999
材積 Dimension	約 appr. 60x60x40mm
重量 Net weight	約 appr. 60kg
電源 Power	1Ø 110V/220V

HT-9782 SOLE MOVING AND BENDING TESTER 鞋底走行彎曲試驗機

- 本機係用來試驗鞋底材料的在繞著滾筒上之傳動布帶上做個環測試，藉以觀察其耐彎曲的程度。動作是由大輪來的帶動小輪，以轉動傳動布帶。小轉輪有三種尺寸供替換與比較測試結果。
- This tester is used to test the bending resistance of shoe soles affixed on the belt turning by two pulleys. Main pulley drives idle pulley by turning the belt. There are three different sizes for the idle pulleys for replacement and for comparison.

布帶轉速 Belt turning speed	90 rpm
布帶長度 Length of belt pulley	1930 ±50mm
大輪直徑 Diameter of main pulley	225mm
小輪直徑 Diameter of idle pulley	60, 90, 120mm
計數器 Counter	6 digits 六位數
試片數 Number of samples	Up to 最多 6 pcs
材積 Dimension	173x657x47cm
重量 Weight	150kg
電源 Power	1 phase, 110/220V, 50/60Hz

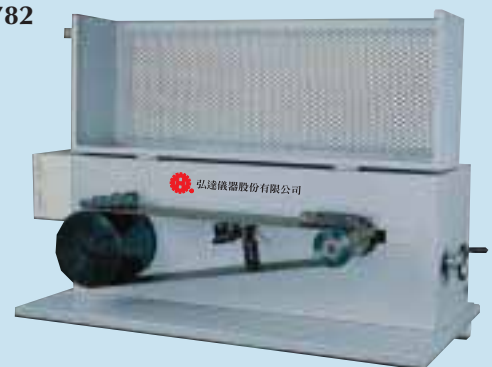
HT-8021



HT-8358



HT-9782



H T-9756, HT-9760

HT-9756 COMPUTER SERVO CONTROL HARDNESS TESTER FOR COMPOUNDED FOAM

電腦伺服式控制合棉硬度試驗機

- 汽機車的座椅中，其填充物大抵為合棉，合棉品質的優劣事關駕駛人乘坐的舒適性。
- 本機係以電腦控制的方式，試驗前先量其厚度，先壓其原厚度75%，放開後再壓原厚度的25%，不動20秒後，記錄其力量，此力量即為所謂的合棉硬度。
- Among the seats for motorcycle or automobile, the quality of the compounded foam inside matters so much if the passenger is comfortable sitting on it.
- This is to press first 75 % of the sample thickness, release and then press 25% still for 20 seconds and then record its force. That would be the hardness of the compounded foam.

容量Capacity	200 kgs
馬達Motor	伺服馬達控制系統 servo motor control system
測試速度Speed	0.6~600 mm/min 電腦控制 computer control
測試空間Test space	寬度Width:750mm 高度Height:540mm
壓縮盤尺寸 Size of compressing plate	Ø200, Ø150, 厚thickness 50mm(鋁製aluminum)
工作檯板尺寸 Size of working table	70×70cm, 厚thickness 15mm (鋁製aluminum)
孔徑：φ6mm, 孔中心距: 20mm, 孔壓面積: 400×400mm Vent: φ6mm, distance between centers: 20mm, Size: 400×400mm	
底座與工作檯板間垂直距離: 560mm Vertical distance between base and working table: 560mm	
測試距離 Testing stroke	390mm
電源 Power source	1P 220V 50HZ/60HZ
材積 Dimensions	160×55×205cm
重量 Weight	160kgs

HT-9756



HT-9760 DAMPING TESTER 衰減力試驗機

- 本機係用以測試避震器的衰減力，藉以判斷避震器的品質，本機適用所有的避震器，包括自行車、機車、汽車、甚或卡車、火車，規格則互有變化。以下為本機之一般規格，詳細規格請再與本公司聯絡。
- This tester is for testing the damping strength of shock absorbers for bicycle, motorcycle, car and even truck and train.

容量 Cap.	1, 2, 5 噸或依客戶指定 1, 2, 5 Tons or as requested
線速度 Line speed	0.05~1.0 m/sec(依主軸轉速而定)
主軸速度Axle Speed	1.5~400 rpm
行程 Stroke	0~80mm
測試空間 Testing space	700mm
上下速度調整 Speed adjustment	300 mm/min
電源 Power	3Ø, 220/380/415V, 50/60 HZ
主機尺寸 Dimension	210(W)x120(D)x250(H)CM
重量 Weight	約1500kgs

HT-9760



H T-9431, HT-8759

HT-9431 MELT FLOW INDEXER 融溶指數試驗機

溫度範圍 Temperature range	Rt~+300 °C
溫度精度 Temperature accuracy	±0.1 °C
計時器 Timer	30 min
水銀溫度計 Mercury thermometer	190 ±1 °C
砝碼 Load	2160 g (或由客戶指定 or requested by client)
圓柱筒 Cylinder	Ø 9.5504 ± 0.0076mm
活塞 Piston	Ø 9.4742 ± 0.0076mm
細孔模 Die	外徑9.5 ± 0.02mm, 孔徑2.0955 ± 0.0051mm, 長度8.00 ± 0.02mm Outer diameter 9.5 ± 0.02mm, inner diameter 2.0955 ± 0.0051mm, Length 8.00 ± 0.02mm
材積 Dimension	35 × 50 × 70cm
重量(約) Weight	55kgs
電源 Power	1 phase, 220V
附件 Accessories	● 水銀溫度計 Mercury thermometer ● 清潔刷一支 cleaning brush for die ● 通管器一支 cleaning brush for cylinder ● 攪料棒一支 stirrer ● 電+

HT-9431



H T-8122A, HT-8122B, HT-8041K

HT-8122 MOLDING TEST PRESS TESTER

電熱壓縮成型試驗機

CNS 4395

- 本機由壓式（手動或電動），將預製作的試料放置於試片模上，壓製於電熱夾板間，可依設定的溫度，壓力及時間使原試料成型以供試驗，作為研究或工廠大量生產的依據。
- 電動式可以選購增加電熱板數目，同時則試三件試片模。
- Features: hydraulic type, (manual or electric) with time setting, temperature setting and pressure setting devices installed. The specimen can be moulded as requested for the purpose of laboratory testing or mass production.
- Electrical driven type is available to add the number of heating board, 3 pcs of specimen tested simultaneously.

Model	8122A	8122B
形式 Type	電動油壓式 Hydraulic (Electric driven)	手動油壓式 Hydraulic(manual)
最大容量 Max. capacity	10,30,50 tons 選一 (或特殊要求)	
壓力表 Pressure gauge	0-200kg/sq.cm	
加熱板行程 Heating plate stroke	Max. 100mm,最大或依客戶指定 Max. 100mm(or upon request)	
溫度 Temperature	RT+10°C~300°C	
加熱板尺寸 Size of heating plate	約300x300mm Approx. 300x300mm	
材積 Dimensions	Approx. 110x50x120cm	Approx.42x45x120cm
計時器 Timer	60min	60min
重量 Net weight	約Approx.250kgs	約Approx.80kgs
電源 Power source	3phase 220v	1phase220v

HT-8122A 最多可加到三層式，可同時測試三個試片，如上圖所示。

Optional:

HT-8122A can be supplied for testing upto 3 specimens simultaneously by increasing the number of heat platens.
(as shown aside up)

HT-8041K HEEL IMPACT TESTING MACHINE

鞋跟衝擊試驗機

- 本機係依BS 5131製造，本機提供足以判定鞋跟品質良莠可靠的測試結果。
- This machine is designed according to BS5131. It supplies reliable testing results in order to judge the quality of heel material.

衝擊能量 Energy of impact: 0-150kg-cm

衝擊角度 Angle of impact: 0-150°

衝擊刃半徑 Radius of Hammer knife edge

迴轉軸中心至衝擊點距離 Distance between center of Hammer Revolving axis and strike point

依鞋跟種類設計及製作夾具 Fixtures designed and manufactured according to the heel's type.

彈性反彈尺 Elastic reacting ruler.

HT-8122A



HT-8122B



HT-8041K

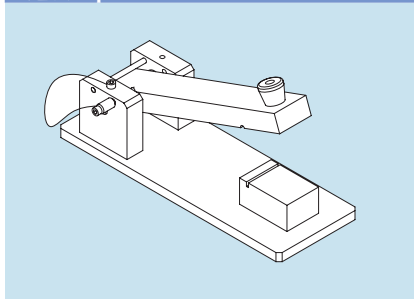


HT-8043

HT-8043 FREEZING TESTER
耐寒試驗機
JIS K6545, ASTM-D1790, D1593

- 本試驗機適用於橡膠、塑膠、電線PVC鞋底，成品鞋，合成皮革…等之耐寒測試，將材料或成品試樣置入設定低溫之環境室內測試，以瞭解材料或成品適應低溫或寒冷地區的使用情形，確保品質的保證。
- 本儀器低環境室內可依測試需求選擇裝置各種物性彎曲、撓曲、捲彎等機構裝置，配備全部採不鏽鋼製成，並符合各種測試規範標準。
- This tester is used to test the cold resistance for the materials of rubber, plastic, cable sheath, outsole, whole shoe leather and synthetic leather, in order to understand the feathers of those materials under a freezing circumstance. This tester would be excellent equipment for quality improvement.
- Inside the chamber there are many selections available for different test purposes. Please refer to the following table.

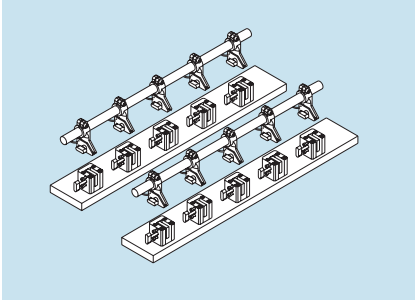
型式MODEL	HT-8043-A	HT-8043-B
溫度範圍 Temperature range	RT~30°C	RT~50°C
環境室內尺寸 Chamber size	60 x 60 x 50	
控溫精度 Temperature accuracy	±0.3°C	
溫度均勻度 Temperature uniformity	±1°C	
降溫能力 Cooling down ability	約需60分 About 60 min.	約需70分 About 70 min.
溫控系統 Temperature control system	電子式數位顯示溫度控制器自動平衡調溫SCR裝置 Digital display temperature controller + automatic balanced temperature system + SCR setup	
冷凍系統 Refrigeration system	全密閉式壓縮機、氣冷式均溫調節控制、壓縮機底溫啟動時間電流保護裝置、環保冷媒規格 Hermetic compressor, air-cooled even-temperature adjusting control, compressor protection setup of startup under low temperature, CFC refrigerant	
機體結構 Chamber structure	內外箱體不鏽鋼材質、採高密度硬質發泡材料、機身結構內部補強堅固 Stainlesssteel SUS#304 plate for interior and exterior, rigid polyurethane foam as insulating material, internally reinforced structure design	
保護裝置 Safety devices	無熔絲漏電超載保護開關、壓縮機過載保護開關、冷媒高壓保護開關、超溫設定保護開關、電磁保護開關 No fuse breaker, compressor overload protection relay, refrigerant high pressure protection switch, over-temperature protector, protection relay	
耗電量 Power consumption	4 KW	6 KW
計數器 Counter	六位數液晶式顯示自動控制 6-digit LCD display	
計時器 Timer	電子式顯示99Hr Digital 999hr/min	
體積 Dimensions	223 x 80 x 90 cm	
重量 Weight	300 kgs (不含撓折配備) (excluding any fixtures)	
電源 Power	1ø, 220V25A	1ø, 220V30A

H選項 Option H

HT-8684 皮革打擊治具 Impact Fixture

用途Purpose	皮革試件在低溫環境下，以本治具打擊，以觀察是否龜裂。 Impact leather specimen under low temperature and check if it cracks.
符合規範 Standards referred	ASTM D1593
體積 Dimensions	35.5 x 10.3 x 12 cm
重量 Weight	9 kg/組
試驗組數 Number of sample	1組/3組 1set/3sets

HT-8043常用治具系列 General applicable fixtures

A選項 Option A (單動作)



HT-8643 耐撓治具 Bally Leather Flexing Resistance Fixture

用途 Purpose 皮革試片於低溫環境測試耐撓曲試驗，以檢查撓曲裂痕之品質。
Flex leather sample under low temperature in order to check the crack of the flexing folding.

符合規範 Standards referred CNC:7705 K-6679, SATRT:PM55, BS:3144, JIS:K6545

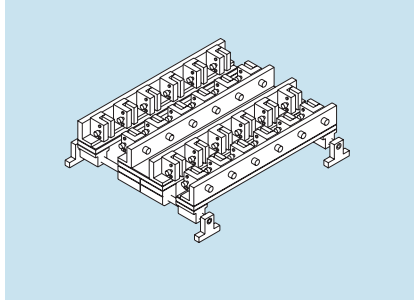
撓曲角度 Flexing angle 22.5°

試片尺寸 Size of sample 70 x 45 mm

測試速度 Test speed 100 ± 3 cpm

試片數 Number of sample 10片pcs

B選項 Option B (單動作)



HT-8021D YSS鞋面伸縮治具 YSS Leather Bending fixture

用途 Purpose 鞋面皮革試片於低溫環境下，測試伸縮，以檢查皮革伸縮品質。
Flex upper material under low temperature in order to measure the quality of flexing resistance

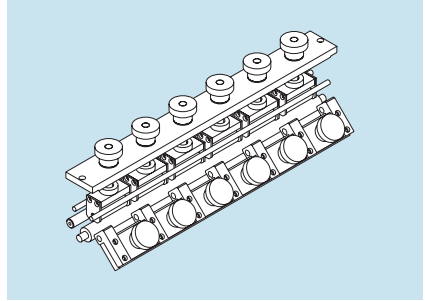
伸縮距離 Flexing distance 19 ± 0.5

試片尺寸 Size of sample 64 x 64mm

測試速度 Flexing speed 90 ± 9次/分times/min

測試件數 Number of sample 12片pcs

C選項 Option C (單動作)



HT-8683大底耐曲折治具 HT-8683 Ross Flexing Fixture

用途 Purpose 皮革試片於低溫環境下，經ROSS裝置測試耐折90度，以查皮革耐折品質。
Put leather sample under low temperature and flex the samples with Ross fixture downwards for 90 degrees in order to check the quality of flexing resistance.

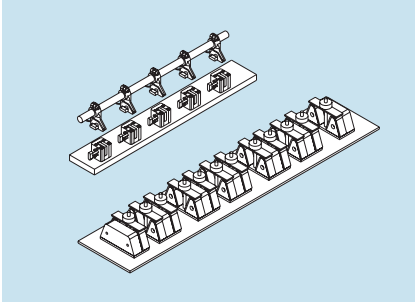
符合規範 Standards referred ASTM-D-1052

耐折角度 Test angle 90°

測試速度 Test speed 103 ± 3次/分times/min

測試件數 Number of samples 6組sets (12片pcs)

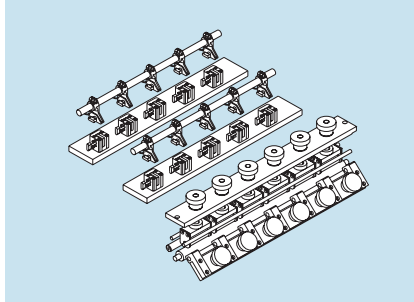
D選項 Option D (二動作)



HT-8643 皮革耐撓治具+ HT-2312 鞋面皮伸縮治具 HT-8643 Bally Leather Flexing Fixture + HT-2312 Vamp Flexing Fixture

用途 Purpose	皮革耐撓 Leather flexing	鞋面皮伸縮 Vamp flexing
符合規範 Standards referred		SATRA PM117
耐折角度 Test angle	22.5°	40°
測試速度 Test speed	100次/分 times/min	300 ± 30次/分 times/min
測試件數 Number of samples	5組sets	12片pcs

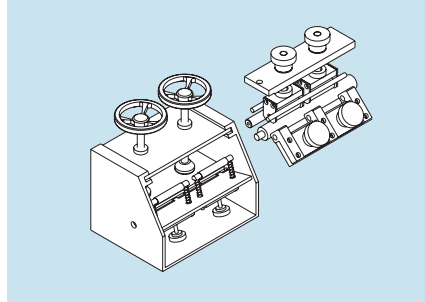
E選項 Option E (二動作)



HT-8643 皮革耐撓治具+ HT-8683大底耐曲折治具 HT-8643 Bally Leather Flexing Fixture + HT-8683 Ross Flexing Fixture

用途 Purpose	皮革耐撓 leather flexing	大底耐曲折 Ross flexing
符合規範 Standards referred		ASTM/D/1052
耐折角度 Test angle	22.5°	0~90°
測試速度 Test speed	100次/分 times/min	
測試件數 Number of samples	10組sets	6組sets 12片pcs

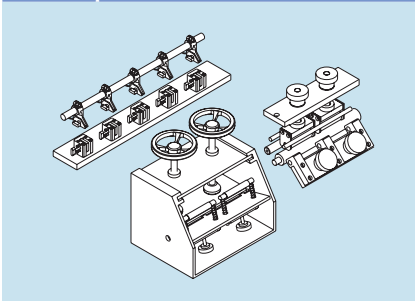
F選項 Option F (二動作)



HT-8682 成鞋耐彎曲治具+ HT-8683大底耐曲折治具 HT-8682 Bending Fixture + HT-8683 Ross Flexing Fixture

用途 Purpose	成鞋耐彎曲 Bending	大底耐曲折 Ross flexing
耐折角度 Test angle	0~90° 可調adjustable	
測試速度 Test speed	100次/分times/min	
測試件數 Number of samples	2組sets	2組sets (4片pcs)

G選項 Option G (三動作)



HT-8643 皮革耐撓治具+ HT-8682 成鞋耐彎曲治具+ HT-8683大底耐曲折治具 HT-8643 Bally Leather Flexing Fixture + HT-8682 Bending Fixture + HT-8683 Ross Flexing Fixture

用途 Purpose	皮革耐撓 Leather flexing	成鞋耐彎曲 Bending	大底耐曲折 Ross flexing
耐折角度 Test angle	22.5°	0~90° 可調adjustable	
測試速度 Test speed	100次/分 times/min		
測試件數 Number of samples	5組 sets	2組 sets	2組 sets (4片pcs)

H T-8046, HT-8047

HT-8046 GEER'S AGING OVEN TESTER

換氣式老化試驗機

■ 本機專門針對橡膠、塑膠及各種絕緣材料之熱老化性能做測試，其性能與一般老化爐不同，本機之設計具備有：

- A. 溫度調節精度。
- B. 溫度分佈均勻。
- C. 開門後溫度回升速率。
- D. 試驗槽內之風速及換氣率。
- E. 試驗槽內之隔熱密封。
- F. 特殊換氣率調整裝置。
- G. 依據測試標準
JIS-K 7212, K 6723, K6301
ASTM-D2436, D573
UL-746B
IEC-540
BS-6746,903
ISO/DIS 4577

■ This tester is designed to test the aging resistance specially for rubber, plastic and some insulator materials. Different from normal aging oven, this tester has:

- a. Temperature constancy
- b. Temperature uniformity
- c. Heat-up speed after door open.
- d. Wind speed & air exchange rate of testing chamber.
- e. Seal of heat-isolation of testing chamber.
- f. Special adjusting apparatus of air exchange.
- g. Conform to testing norms:
JIS K-7212, K-6723, K-6301,
ASTM D-2436, D-573
UL-746B, IEC-540, BS-6746,
903, ISO/DIS 4577

ITEM	MODEL	A	B
INSIDE DIMENSION (WxHxD)	內徑尺寸	450x450x450(m/m)	600x600x600(m/m)
TEMPERATURE RANGE	溫度範圍	RT~200°C	RT~300°C
TEMPERATURE	INDICATOR 顯示	±0.3°C	
	UNIFORMITY 精確度	±0.5%	
ROTATION SPEED	迴轉速度	8~10 RPM	
AIR REFRESH	空氣循環	option1:1-10 time/hour option2:10-200 time/hour	
POWER CONSUMPTION	電源供應	220V SINGLE PHASE 5KW 220V SINGLE PHASE 7KW	
ACCESSORIES	附件	1.SQUARE SHELVES 2PCS 2.TEST SPECIMEN 2PCS 3.RUNNING METER 1PCS 4.TIME METER 1PCS	
OPTION		AIR FLOW METER * (RECORDER)	

HT-8047 AGING OVEN TESTER

老化試驗機

JIS K-630, K-7212, ASTM D-2436, E-145, JTTC SPEC.-151 CNS

- 本烘箱係用來研究橡膠等試片在固定時間內，以迴轉方式受熱下的變化。在70°C下測試1天，理論上相當於曝露在大氣中6個月的時間，本烘箱配備有馬達驅動式迴轉盤。熱風循環的功能可以確保溫度的均勻分佈。
- The oven is used for degradation study of plastics & rubber when subjected to heat in a rotational condition for a specified time. One day test at 70°C is theoretically equivalent to a six-month usage in normal environmental condition. The machine is equipped with a motor-driven rotary plate. Hot air circulation will ensure even temperature distribution.

型式	Type	A	B
內徑	Inner dimension	40x40x45cm	50x50x60cm
電熱	Heat	1.8KW	3.2KW
溫度	Temperature	RT~200 or 300 degree ceisius	
馬達速度	Motor(speed)	8-10 rpm	
重量	Net weight (kg)	80	120
材積	Dimension(cm)	84x54x100	95x65x118
馬達	Motor	1 /4 HP	1/2HP

換氣率測定方法 MEASURING METHOD OF AIR CHANGE

● This method measures the air change rate of the std type oven as follows:

equation

$$N = \frac{3590 (X - Y) \cdot 2}{V \cdot D \cdot \Delta T}$$

where

- N: Number of change of air per hour.
- X: Power consumption during air change (W).
- Y: Power consumption during no air change(W).
- V: total volume of over (cm³).
- D: Density of over ambient air (g/cm³).
- ΔT: Temperature difference inside/outside over(°C)

HT-8046



HT-8047



H T-8247, HT-8247A

HT-8247 ULTRA-VIOLET TEST CHAMBER

耐黃變試驗機

- 成品鞋出口運輸途中，係置於貨櫃中，因受太陽輻射影響，鞋材易於與其所含之化學成份產生作用，致使鞋子之色澤產生變化。本機係模擬太陽光中之紫外線，測試鞋材之耐黃變特性，以利其製程中，化學品添加量管制的參考。一般測試參考時間為三小時，相當於在貨櫃中3個月。
- 本機內外箱皆採不銹鋼材質，並附試件架及空間循環裝置，確保試件受熱均勻。
- Owing to the transportation of shoes in the container for export, heat radiation directly cast on the finished products, causing chemical reaction which results in shoes fading or discolouring. Test of three hours in the chamber is equivalent to the time of holding in the container for 2 months long.
- This tester is made of stainless steel both inside and outside, with a sample rack and designed with air circulation device.

光源 Light source	UV燈管 15Wx2支 Tube
內徑 Test chamber size	46x30x35cm
計時器 Timer	12小時 12hours
電源 Power source	1Ø, 110V or 220V
紫外線燈管 Ultraviolet light	15w. 2pieces
測試距離 Testing distance	150~250mm
內外箱材質	不銹鋼
Inner and outer of the chamber	Stainless steel
試片架 Sample rack	1組 One set
材積 Dimension	65x40x45cm
重量 Net weight (約Approx.)	15kgs

HT-8247



HT-8247A DISCOLORATION TESTER 耐黃變試驗

ASTM-D1148

- 成品鞋出口運輸途中，係置於貨櫃中，因受太陽輻射影響，鞋材易於與其所含之化學成份產生作用，致使鞋子之色澤產生變化。本機係模擬太陽光中之紫外線，測試鞋材之耐黃變特性，以利其製程中，化學品添加量管制的參考。一般測試參考時間為三小時，相當於在貨櫃中3個月。
- 本機係以德製UV燈泡作為光源，並控制其箱內溫度，提供業界更為精確、詳實的參考。
- This tester is used to test the discoloration resistance of shoes materials when PU in containers exposed under the circumstances of sunshine radiation. This is a good reference when determining chemical components of shoes materials.

光源 Light source	300W UV 燈泡 Lamp
迴轉盤尺寸 Specimen pan	Ø45cm (revolving)
迴轉盤速度	0~50 r.p.m. (adjustable)
溫度 Temperature	Rt ~200°C
加熱方式 Heating method	熱風循環式 Hot air circulation
隔熱層 Heat holding layer	玻璃纖維 Glass fiber
光度 Light irradiance	可調 Adjustable
計時器 Timer	0~24小時 0~24HR
馬達 Motor	1/4 HP
內徑 Internal	50x50x60cm
材積 Dimension	95(W)x65(D)x113(H)cm
重量 Weight	95 kgf
電源 Power	1Ø, 220V

HT-8247A



H T-8053, HT-8054

HT-8053 SOFTENING POINT TESTER 加熱針入度試驗機

JIS K6742

- 本機係以壓針插入試件，並施以砝碼荷重，溫度箱中以每分鐘1°C的速度加熱當壓針入試件0.1MM時，記錄其所需溫度，藉以判斷試件的耐熱性，一般而言超過80°C才算合格。
- 本機又稱為韋氏軟化點試驗機，可同時測試三個試件。
- Put indenter on specimen and load force on the indenter into the chamber with heating speed of 1°C/min. When the indenter penetrates into the specimen for 0.1m, record the required temperature to judge the quality of heat resistance. Normally, it is regarded to be qualified for over 80oc.(it can simultaneously test 3 specimens.)

試件尺寸 Specimen size	15x10x2mm
壓針 Indenter	Ø1mm
砝碼 Load	2kg
百分錶 Micrometer	0.01~10mm
溫度錶 Temperature	Rt~200°C
試件數 Test specimen	3 sets
電源 Power source	1 phase; 220V; 50/60Hz
材積 Dimension	70x50x115cm
重量 Weight	75kg

HT-8053



HT-8054 DEFLECTION TEMPERATURE BATH (H.D.T.) 加熱變形溫度試驗機

CNS-2229, 4393, ASTM-D648,

- 將試件置於試驗箱中的兩支撐點上，施荷重於加溫桿上，試驗箱以2°C/min的速度加熱。當試件的中央部份下陷變形一特定距離(塑膠材質0.26mm，硬橡膠材質0.25~0.33mm)時，所需溫度即為變形溫度。亦可於恆溫環境(硬橡膠材質23°C)中試驗試件的撓曲強度。
- After putting the specimen on the two supporting racks inside the inner bath, add the load post and heat up at the rate of 2°C/min. When the central part of the specimen falls down for a given depth (plastic at 0.26mm, ebonite at 0.25~0.33mm), the actual temperature required is the deflective one. You also can test the cross-breaking strength of the specimen at the constant temperature (ebonite at 23°C).

HT-8054



溫度控制器 temperature controller	可程式 Programmable, Rt~300°C
試件尺寸 specimen size (L×W×H)	127×12.7×12.7mm, 127×3.175×127mm, 127×6.35×12.7mm
導熱油 conductive heating liquid (excluded)	甘油 Glycerine, 矽油 silicon oil, 或絕緣油 insulating oil
支撐點 support	間距 Space 100±2mm, (R)3±2mm
荷重 load	1.82 Mpa, 0.455Mpa
攪拌馬達 mixer motor	25W
百分錶 micrometer	0.01~10mm
材積 dimension	55×40×60cm
重量 weight	35kgs
電源 power	1Ø, 220V

H T-8025, HT-8136, HT-8058

HT-8025 PAR MARTON TYPE SPECIMEN ADJUSTER 試片磨平機

- 本機係用以將各種形狀的試件磨成適當的尺寸，以工作拉力試驗。附把手，可供上下、左右、前後移動。
- This machine is used to grind the surface of a sample and changes the thickness of various kinds of material to suit the physical test such as tensile test. Move specimen by adjusting the wrench to a direction of up/down, right/left, forward/backward.

試件尺寸 Specimen size mm	最大 Max 45(W)x13(L)x5(T)
砂輪尺寸 Grinding wheel size	150x38mm36#
馬達 Motor	1/3HP
速度 Speed	1800-3200rpm(可選擇 selectable)
工作空間	
Available working area	270x70x15mm
Working table size	440x70mm
材積(cm) Dimensions	60x55x40cm
重量(約) Net weight	50kgs
電源 Power	1ø,220v
選用配備 Optional	吸塵器 Vacuum cleaner

HT-8025



HT-8136 DAYLIGHT 標準光源箱

JIS-Z8724, IEC-30

- 本機係依IEC標準製作，採箱型的設計，能防止外光影響，使色合的調整管理有所依據。
- 本機又稱對色燈，使買賣雙方對顏色的判別能有所依據。
- This tester is made in accordance with C.I.E. and certified the minimum interference of the ultra light.

光源 Light source	D光源：又稱北窗光源，為標準光源，色溫7500K A光源：夕陽光源，又稱精密鎢絲燈泡光源，色溫2850K UV光源：紫外線光源 F光源：高效能日光燈光源 Ultra Violet lamps North sky daylight Incandescent, filament light High energy fluorescent lamp
內徑 Test chamber	70(W)x53(D)x35(H)cm
重量 Net weight	26kgs
材積 Dimensions	72(W)x57(D)x56(H)cm

HT-8136



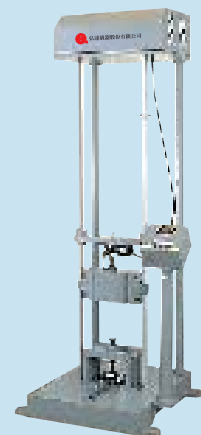
HT-8058 SAFETY SHOES IMPACT TESTER 安全鞋衝擊試驗機

CNS6863, CSA, ANSI, EN344, QAS

- 將安全鞋頭置於衝擊區，以特定之能量加以衝擊，檢查其凹陷程度，藉以判斷該安全鞋之品質程度。
- Place the steel head part of safety shoes at the impact area, impact test sample by certain energy. Check how the dent is in order to judge the quality of this safety shoe.

衝擊高度 Impact height	EN 0~1100mm	BS, ANSI
衝錘重量 Impact weight	20 ± 0.2kgs	22.7kgs
衝擊能量 Impact energy	200 J	100 ± 2 J
衝擊刀刃 Impact blade	R3 ± 0.1mm	ø25.4mm
馬達 Motor	DC 1/4HP	
不斷電系統 UPS	10A, 220V AC	
材積 Dimension	83 × 70 × 204 cm	
重量 Weight	250kgs	
電源 Power	1 phase, 220V, 50/60Hz	

HT-8058



註：EN, ANSI, BS, CSA等規格略有不同，訂購時請注意指定規格。
Note: The requirements between the standards of EN, ANSI, BS, CSA are slightly different, please specify your desired standard.

H T-8020A, HT-8020B, HT-8320, HT-8321

HT-8020A, HT-8020B, HT-8320, HT-8321 BURSTING STRENGTH TESTER 破裂強度試驗機

CNS-2054 3479 JIS-L1004, L1018, L1031, K6328, P8131, P8112, ASTM-D2210, TAPPI T403ts-63

- 本機在試驗紙、瓦楞紙板之抗破裂強度，為驗證表面紙及蕊紙品質不可或缺的設備。
- This tester is used to determine the bursting strength of paper and corrugated board. It is an essential equipment for quality control.

規格 SPECIFICATION

Type 型式	HT-8020A	HT-8020B
特點 Features	電子式顯示器 digital display 夾持壓力錶 Clamping pressure gauge	夾具壓力表 Clamping pressure gauge
容量 Capacity	100 kg/cm ²	20/50, 50/100 kg/cm ² (任選—selectable)
夾持盤直徑 Diameter of clamping	高壓 High pressure : 上 Upper : 31.5+/-0.05mm dia. 下 Lower : 31.5+/-0.05mm dia. 低壓 Low pressure : 上 Upper : 30.48+/-0.03mm dia. 下 Lower : 31.75+0.25mm dia.	
加壓速度 Speed of pressurization	高壓 High pressure : 170+/-20ml/min 低壓 Low pressure : 95+/-10ml/min	
顯示精度 Precision of display	0.1kg/cm ²	
退壓速度 Speed of depressurization	高壓 High pressure : 340+/-20ml/min 低壓 Low pressure : 190+/-10ml/min	
馬達 Motor	1/4 or 1/3 HP, 50/60HZ	
顯示 Display	Digital Indicator 電子顯示器	3 pcs. of pressure gauge
電源 Power source	110V or 220V	
材積 Dimensions	(約 approx) 53cmx36cmx63cm	(約 approx) 64cmx35cmx50cm
重量 Net weight	(約 approx) 65kg	(約 approx) 65kg

Type 型式	HT-8320	HT-8320A	HT-8321
特點 Features	夾持壓力錶 Clamping pressure gauge	電子式顯示 Digital display 夾持壓力錶 Clamping pressure gauge	全自動 Automatic
容量 Capacity	20/50, 50/100 kg/cm ² (selectable) (任選—)	100 kg/cm ²	20/50, 50/100 kg/cm ² (selectable) (任選—)
夾持盤直徑 Diameter of clamping	高壓 High pressure : 上 Upper : 31.5+/-0.05mm dia. 下 Lower : 31.5+/-0.05mm dia. 低壓 Low pressure : 上 Upper : 30.48+/-0.03mm dia. 下 Lower : 31.75+0.25mm dia.		
加壓速度 Speed of pressurization	高壓 High pressure : 170+/-20ml/min 低壓 Low pressure : 95+/-10ml/min		
顯示精度 Precision of display	0.1kg/cm ²		
退壓速度 Speed of depressurization	高壓 High pressure : 340+/-20ml/min 低壓 Low pressure : 190+/-10ml/min		
馬達 Motor	1/4 or 1/3 HP, 50/60HZ		
顯示 Display	3 pcs. of pressure gauge	Digital indicator 電子顯示器	3 pcs. of pressure gauge
電源 Power source	110V or 220V		
材積 Dimensions	(約 approx) 64x35x62 cm	64x35x75 cm	92x34x72 cm
重量 Net weight	(約 approx) 80kg	80kg	180kg

* 另有HT-8320A 電子式顯示方式供選擇

HT-8020A



HT-8020B



HT-8320



HT-8321



H T-9493, HT-8024A, HT-8124A

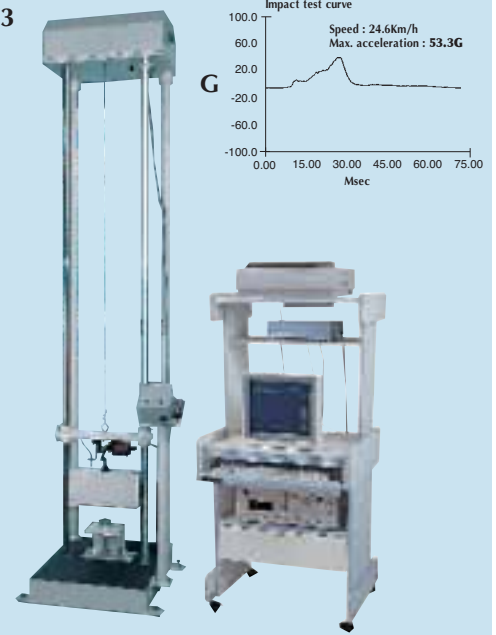
HT-9493 FALLING WEIGHT IMPACT TESTER

落錘衝擊試驗機

- 本機係用來測試一自由落體，在不同條件下，使一平板硬質試片產生龜裂或破壞，所須之能量。
- This is to test the energy required to crack or break flat, rigid plastic specimens under various specified conditions of impact of a free-falling tup or weight.

輸入頻道 Input channels	4
解析度 Resolution	12 位元 bits (A/D)
最大取樣速度 Max. sampling rate	50kHz
最大片狀試片尺寸 Maximum size of sample (sheet)	100 × 100 × 4mm
最大模具試片尺寸 Maximum size of sample (moldings)	250(W) × 350(D) × 250(H)mm
最大落下高度 Maximum drop height	300cm
基本落錘重量 Basic of drop mass	2.6kg
衝擊錘形狀及重量(可替換) Striking head profile and mass (replaceable)	Ø25 × 185mm, 頂端 tip 12.5R (660g)
電源 Power	3Ø, 220/380/415V, 50/60Hz
主機尺寸 Dimension of frame	75(W) × 65(D) × 420cm
主機重量 Weight of frame (appr.)	350kg

HT-9493



HT-8024A PLASTIC CUTTING TESTER (FOR HARD MATERIAL) 硬質試片切片機

- 本機係用來切割較硬的塑膠試件，試件放置固定尺寸模具中，靠推向迴轉刀具來切割試件。
- This machine is used to cut a sample specimen of hard plastic materials. The cutting method employed is most widely used and accurate. Specimen is held in a holder of fixed size and pushed against the revolving cutter.

試件尺寸 Specimen size	1,2,3#or V type (可選擇 selectable)
馬達 Motor	1/2HP,3 phase 220V
電源 Power source	1Ø,220v
材積(cm) Dimensions	70x40x115cm
重量(approx) Net weight	75kgs
選配 Optional	吸塵器 Vacuum cleaner

HT-8024A



HT-8124A SAMPLE CUTTER FOR IMPACT TEST

衝擊試片切角機

JIS K7110, ASTM D256

- 本機係用以切削塑膠試片成標準尺寸，作為衝擊試驗之用。
- This is used to cut plastic test samples into the standard size of V notch shape so as to apply for impact test.

V型槽角度 Angle of V notch	45° ±1°
切削速度 Cutting speed	1800 or 3400 rpm
高度調整 Adjustment of height	0.05~25.00mm
馬達 Motor	1/4HP
材積 Dimension	58 × 45 × 31cm
重量 Weight	45kgs
電源 Power	1 phase, 110/220V, 50/60Hz

HT-8124A



H T-8029, HT-8029A

HT-8029 WATER BATH TESTER 恆溫水槽

CNS-3143, 740, 3479;ASTM-D1693

- 本機適用於漆包線、絕緣被覆體等材料之耐水性試驗。
- 將試件浸於熱水中一段時間，再取出試件，以研究其劣化情形，如起泡、退色、膨脹等等。另外，在相同條件下亦可檢查試件重量的變化。
- Within a certain period of time, the specimen being soaked in the hot water in order to study the degenerating condition, such as blistering, fading, swelling, etc. In addition, the test method is expected to further calculate the changes in weight while under such a condition.

型式 MODEL ITEM	HT-8029
溫度 Temperature	Rt~100°C
容量 Bath capacity lid opening	30X30X20cm
材積 Dimensions (WxDxH)	65x43x35cm
重量 (約) Net weight	17kgs
電源 Power source	1 phase,220V

HT-8029A OIL BATH TESTER 恆溫油槽

型式 Model	C type	D type
試件 Applied	啞鈴型試片 Dumbell sample	漆包線 Enameled copper wire
試料數	試杯×6 test cups,	
Sample volume (cm)	ø5×15 (深 depth)	試驗槽 Test bath 30×30×20
溫度 Temperature	Rt~300°C	
攪拌馬達 Mixer	25W	
材積 Dimension	65(W)x43(D)x35(H)cm	
重量(約) Weight(appr)	20kg	17kg
電源 Power	1ø, 110/220V, 50/60Hz	

可接受特殊尺寸訂製 Different inner size available upon request at extra charge.

HT-8029A



材料 Material	橡膠外皮 Rubber sheath	塑膠絕緣被覆體 Plastic insulator or sheath	漆包線 Enameled copper wire
試驗油 oil	CNS 3562 #2潤滑油 #2 lubricant of CNS 3562 (須由客戶自備 responsible by client)		CNS 1326絕緣油 Insulating oil of CNS 1326 Test (須由客戶自備 responsible by client)
試件規格 Specimen size	#3 或 #4 啞鈴型試片 Dumbbell sample		長度 length: 20cm
試驗時間 Test time	1.8hrs	4hrs	24hrs
試驗溫度 Test temperature	120°C	70°C	100°C
浸泡深度 Soaking depth	-	-	15cm

H T-8024P, HT-8024

HT-8024P PNEUMATIC PUNCH PRESS TESTER

氣壓式切片機

JIS K6301, UL1581

- 除了手動切片機外，本公司另提供氣壓式切片機，供貴客選擇
- Besides hand-driven type, pneumatic type is available for your selection.

出力源 Cutting source	Min. Compressed air 6kg/cm ²
切壓出力 Cutting force	1 tons
有效空間 Effective space	260 × 200 × 70mm
試片厚度 Specimen thickness	10mm
氣壓缸行程 Cylinder stroke	90mm
重量 Weight	55kgs
材積 Dimension	47 × 26 × 60cm

HT-8024P



HT-8024 PUNCH PRESS TESTER 試片切片機

JIS-K6301, UL-1581

- 本機係以轉動圓形把手將試件切成各種形狀，以工作拉力、延伸、老化及耐油等的試驗。
- This machine is designed to cut a sample specimen of a specific size by revolving the round wrench. The specimen is meant either for elongation, tensile, aging, or oil test.

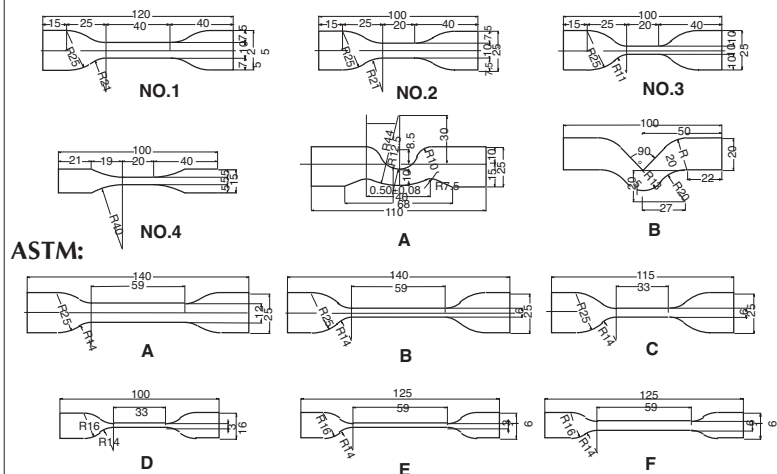
斬刀 Specimen cutter	1,2,3# or A,B type 可選擇 (selectable)
有效工作區域 Available working area	30x16cm
切斷方式 Pressurization	手動操作 By manual operation
砧板尺寸 Pressure plate	15x7cm
材積(cm) Dimensions	Approx. 45x45x70cm
重量(約) Net Weight	Approx. 60kgs.

HT-8024



CNS, JIS:

Unit:mm



DUMB-BELL CUTTERS 斬刀

- 常用斬刀如左圖，另有其他規格可接受訂製。
- Aside cutters are our standard ones. Besides, we accept any other special dimensions upon extra charges.

H

HT-8042A, HT-8042B, HT-8075A

HT-8042A DU PONT TYPE IMPACT TESTER

杜邦式衝擊試驗機

JIS-K5400, CNC10756

- 本機主要利用衝錘形狀、重量及高度，對試件之落下衝擊，再觀察其變形或受損情形。
- Put specimen under the impact head with the coated face upwards. Then check the damage or deformation of specimen after it is impacted by the hammer from a certain height.

	油漆 For Paint	塑膠 For Plastics
落下高度 Falling height(mm)	最高500MM 孔距50MM Max. 500mm at every 50mm	最高1000MM up to 1000mm
衝錘重量 Falling weight (g)	300, 500, 1000g	1000, 2000g
衝錘半徑 Radius of impact head (inch)	1/2, 1/4, 3/16, 1/8 1/16	7.9mmR(5/16")R
墊塊半徑 Radius of receive block	平 Plain, 1/4, 3/16, 1/8, 1/16	8.1mmR, 15mmR
依標準 Testing method	JIS K 5400, K 5640	ASTM D2794
材積 Dimensions (appr.)	46x30x76cm	46x30x127cm
重量 Net weight (kg)	約30	約40

HT-8042A



HT-8042B FALLING BALL IMPACT TESTER

落球衝擊試驗機

JIS K6745, A5403, K7211

- 本機係以電磁方式吸住落球，並上升至一特定高度，釋放落球打擊在試件上再觀察其變形或受損情形。
- 可試驗之試件包括塑膠、漆層、陶瓷製品及漆包材料等。
- The falling ball is sucked by the magnetic current and elevated to a fixed height. A sudden drop of the iron ball is used to test the impact strength of the plastics, paint films (coatings), porcelain products, enameled materials, etc.

最大高度 Maximum height	150cm
落球 Falling balls	112,198,225,357,533,1042,2280g(選購)
電源 power source	110v or 220v
材積 Dimensions	40x50x200cm
重量 Net weight	Approx.80kgs

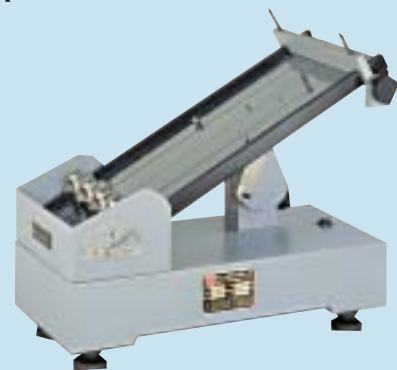
HT-8042B



HT-8075A TAPE INITIAL ADHESION ROLLING BALL TESTER 膠帶初粘性滾球試驗機

- 本機係利用鋼球在固定於斜板上的膠帶滾動的距離，來測試膠帶的粘性，藉以判斷其品質，並記錄能停留於膠帶上超過5秒的球號。
- The theory of this testing machine is to test the adhesion characteristics of tapes by making the adhesive surface of specimen upward and place it onto the test plate inclining 30°, fix two ends with tape and weight respectively. Then start from the largest steel ball; let the ball roll from the test plate one by one. Record the number of steel ball that can stay at the tape for over 5 seconds.

HT-8075A



斜板角度 Angle of Slant board	20° ~40° 通常adjustable normally 30°
試件數 No. of specimen	4PCS
試件尺寸 Specimen size	Width 10~15mm,length 400mm
鋼球 Steel ball	No.2~32, Dia. 1/16"~1"(box package)
斜板材料 Material of slat board	5mm thick frosted glass
助跑道 Aided Path	Thickness 25um, length 100mm polyester
砝碼 Reference Weight	500g with dia. 50mm
材積 Dimension	51x30x30cm
重量 Net weight (appr.)	15kg

H T-8137, HT-8354, HT-8172

HT-8137 PERSPIRATION TESTER 耐汗試驗機

ISO 105E04, AATCC-RR52

- 將試件置於人工汗液中完全浸泡30分鐘，以砝碼施重，並於37°C的恆溫箱中放置4小時後，再取出，對照灰色標，以判斷其耐汗級數。
- 本機適用之對象包括各種纖維布料及鞋材織物等。
- Wholly and evenly immerse the test sample in artificial sweat liquid for 30 minutes, and apply with load. Place it in an oven exposed under the temperature of 37°C continuously for 4 hours. Take it out, compare it with gray scale to determine its grade of perspiration resistance.

型式 Type	JIS	AATCC
試片尺寸 Sample size	6x6cm 或10x4cm	
壓克力板 Acrylic plate	115x63x3mmx10片 pieces	
荷重 Load	4.5kgs	8Lbs
重量 Weight	17(W)x8(D)x19(H)cm	25(W)x8(D)x19(H)cm
體積 Dimension	6kg	6kg

HT-8354 COMPRESSION AND DEFORMATION TESTER 永久壓縮歪試驗機

CNS-3560,10487 JIS-K6301 ASTM-D395

- 本機係一靜態試驗膠在熱環境下的耐壓程度。將試件置入壓板中，鎖上螺絲至適當位置。置入恆溫箱中一段時間，取出冷卻30分鐘，再量取其厚度。
- This is a static way to test the rubber compression under heat. Place the specimen between plates and screw the bolts to a fix position. But the specimen into the oven for a certain period of time. After finishing the test, take out the specimen and cool for 30 minutes. Measure the post-test thickness.

加熱時間：70°C-22小時 100°C-70小時

HEATING TIME 70°C-22Hr 100°C-70Hr

試件硬度 Hardness Of specimen		Compression	Thickness of
ASTM	JIS	壓縮率 Rate	壓板厚度 Platens
45 以下 BELOW	40 以下 below	40%	7.62mm
45-65	41-60	30%	8.89mm
65-85	61-80	25%	9.52mm
85 以上 above	81 以上 above	20%	10.16mm

計算公式 Calculation formula:

$$\frac{\text{試驗前試件厚} - \text{壓板厚}}{\text{試驗前厚度} - \text{隔板厚度}} \times 100$$

$$\frac{\text{thickness before} - \text{thickness after}}{\text{thickness before} - \text{thickness of plate}} \times 100$$

試件 Specimen	橡膠 Rubber-Ø28.68mm 高 Height-12.7mm 發泡塑膠 Foam plastic 50x50x25(LxWxH)
材積 Dimensions	20x12x10cm
重量 Net weight	11kgs

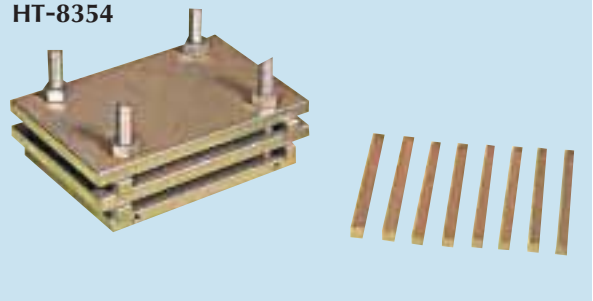
HT-8172 90° ADHESION-TEARING STRENGTH TESTER 90° 剝離試驗機

- 本機係以垂直90° 剝離粘著物，以測定試件之黏合強度。本機係銅箔、錫箔、鉛箔或標籤紙等行業之重要測定儀器。
- This tester is to test the adhesiveness of adhered material such as copper foil, aluminium foil & tin foil. Lower layer is being gripped firm while the upper grip moves laterally 90° from vertical. The force is read from the push pull gauge.

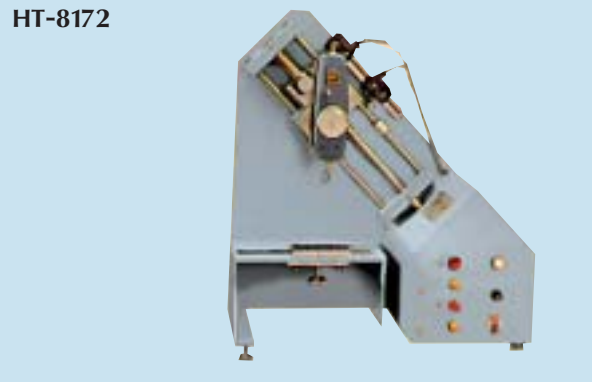
HT-8137



HT-8354



HT-8172



容量 Loads	1,2,3,5,10,30kgf (selectable)
速度 Speed	50mm/min(可調)
角度 Angle	90° degree, from vertical
電源 Power source	110v or 220v
材積 Dimensions(Approx.)	54(W)x28(D)x58(H)cm
重量 Net weight(Approx.)	41kgs.

H T-8173, HT-8173A, HT-8174

HT-8173 TAPE RESISTANCE TESTER

膠帶保持力試驗機

CNS11887 Z6085

- 本機係將膠帶粘貼於不銹鋼板，下方掛以1000g之荷重，記錄膠帶脫離不銹鋼板的時間來判斷膠帶之品質。
- This tester is to test the character of adhesive tape by running over one end of adhesive tape with roller to make it stick on the testing board. Then apply 1000 g load underneath the tape to ascertain duration where by the tape detached from the specimen (stainless steel & etc). This measures the durability of the adhesive tapes.

	HT-8173	HT-8173A
環境Environment	Normal 常溫	Heat conditioned 溫度加熱
試件數 No. of Specimen	5個, 附個別計時器 5 pcs with individual counter	3個, 附個別計時器 3 pcs with individual counter (or as request)
不銹鋼板尺寸 Size of Testing board	25x150mm	25x150mm
測試面積 Testing area	25x25mm	25x25mm
砝碼 Load	1kgx5片 1 kg x 5 pcs	1kgx3片 1 kg x 3 pcs
計時器 Timer	電子式6位數x5組 5 sets individually (99999.9 hrs)	電子式6位數x3組 3 sets individually (99999.9 hrs)
溫度 Temperature	室溫 Room temperature	Rt~+100°C 或依客戶指定 Rt~100°C (or as request)
材積Dimension(cm)	50(W)x30(D)x65(H)cm	84(W)x54(D)x130(H)cm
重量Net weight (appr.)	25kgs	95kgs
電源 Power	1Ø 110V	1Ø 220V

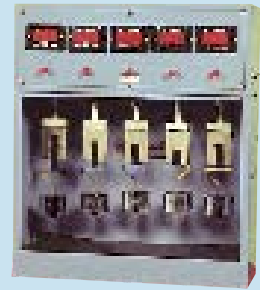
HT-8174 ROLLER TESTER 滾輪試驗機

CNS 11888 Z6068

- 本機係用來將膠帶粘貼於長125mm，寬50mm，厚1.5~2.0mm的不銹鋼板上，利用2000 ±50g重的滾輪以300mm/min的速度來回碾壓於試件上。
- Stick adhesive tape specimen on a piece of stainless steel board with 125mm long, 50mm wide and 1.5~2.0mm thick. And put them under a roller with weight 2000 ± 50g. Roller runs over the specimen back and forth once at the speed of 300 mm/min.

型式 Model	電動 Motor	手動 Manual
滾輪重 Weight of roller	2000 ±50 g	2000 ±50 g
滾輪尺寸 Size of roller	Ø83mm, 寬45mm dia. 83mm, width 45mm	
滾輪材質 Cover material of roller	Rubber HS 80 thickness 6 mm	Rubber HS 80 ±5 thickness 6 mm
速度 Speed(mm/min)	最大500mm/min 常用300mm/min 0~500(special:300)	手動 Manual
材積 Dimension(cm)	40(W)x20(D)x35(H)cm	15(W)x7(D)x10(H)cm
重量 Net weight (appr.)	95kgs	25kgs
電源 Power	1Ø,220V	-

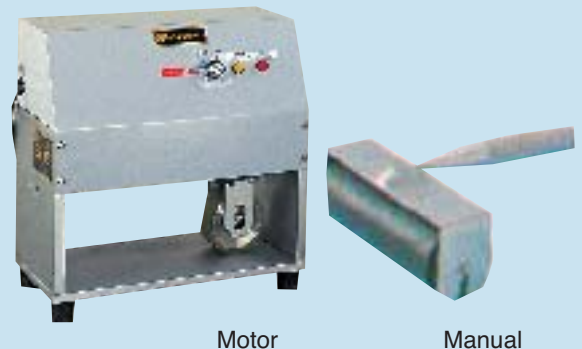
HT-8173



HT-8173A



HT-8174



Motor

Manual

H T-8181, HT-8356, HT-8187

HT-8181 ELMENDORF TEARING TESTER

撕裂試驗機

TAPPI-T414, JIS P-8116, CNS-B53

- 本機係用來測試紙張、織品及PVC材質的撕裂強度。
- 固定試件後，先以切刀切開一缺口，再施以撕裂動作，撕裂力則顯示於刻度尺上。
- To test tearing strength of fabric, paper, PVC material etc. Specimen are being slightly splitted. One side is firmly gripped and the other is being gripped and moved forward to effect tearing action scale pointer indicates tearing strength.

型式 Type	A	B	C
容量 Capacity(gf)	0~100g or 0~200g	0~1600g or 0~3200g	0~6400g
試件尺寸 Size of sample	63±0.15x76±2.0mm		
參考標準 Referent Standards	TAPPI-T414, ISO-6383 JISP-8116, CNS-1355		
材積約 (appr.) Dimension (cm)(WxDxH)	50x25x37	60x40x50	80x55x75
重量約 Net weight	15kgs	35kgs	60kgs

*Optional: Micro-computer indicator is available upon request. (HT-8181D)

HT-8181



HT-8356 COMPRESSION TESTER OF MAN-MADE SOLINGS 泡棉潛變試驗機

- 本機係用來測試泡棉在一定時間內持壓的抗壓性，藉由外力消除後，泡棉的伸縮性來判斷其品質的良劣。
- Usage: This apparatus is to determine the ability for the materials of man-made solings to withstand compression under a constant load for a period of time.

加壓 Load	5-150 kgf available
百分錶 Thickness gauge	0.01-50mm
圓盤 Dia. 10cm disk plate	6片 6pcs
有效行程 Efficient stroke	超過100mm greater than 100mm
材積 Dimension	30(W)x30(D)x60(H)cm
重量 Net weight	15kgf

HT-8356



HT-8187 BALANCE 電子天平 (比重用)

型式 Model	200D	310S
容量 Capacity	210g	310g
解析度 Resolution	0.001g	0.01g
比重解析度 Density resolution	0.001	
材積 Dimension	210x317x86mm	188x250x70mm
重量 Weight	3.8kg	5.8kg
電源 Power	110/220V (supplied with AC adapter 附變壓器)	

200D

310S



H T-8355, HT-8355V, HT-8622

HT-8355 REBOUND RESILIENCE TESTER

反撥彈性試驗機

JIS K-6301

- 本機係用來測試加硫橡膠的反撥彈性，藉以制定橡膠試件品質的良窳。
- This machine is to test the rebounding flexibility of vulcanized rubber. The method is to move the iron post, set scale at 100 position. Then make iron post drop down freely. The rebound height for the 4th striking will be the bounding flexibility rate of sucl specimen.

試件尺寸 Specimen	Ø28.68~29mm, 12.7mm 高 height
鐵杵 Iron post	Ø12.7mm, 356(L), 6.35(R)mm,
重量 weight:	350g
水平尺 Horizontal length of scale	100mm (100 graduations)
垂直尺 Vertical height of scale	100mm
落下高度 Drop height	2000mm
懸吊鋼絲長度 Length of hanging wire	2000mm 前後距離：250mm 左右距離：900mm 2000mm (front & rear distance: 250mm) (right & left distance: 900mm)

HT-8355



HT-8355V VERTICAL REBOUND RESILIENCE TESTER

垂直式反撥彈性試驗機

ASTM D263

- 本機係用以落錘垂直自由落下的方式來試驗橡膠的彈性。落錘自特定之高度落下，前三次之結果不計，記錄第4~6次的結果，並求其平均值。
- This tester uses the vertical free falling of hammer to test the features of vertical rebound resilience for rubber specimen. Hammer falls freely from a certain height. The first three tests are ignored, and the test results from the fourth to sixth tests should be recorded down and so to get the average.

落錘重量 Weight of hammer	28g
落下高度 Falling height	400mm
試片厚度 Thickness of specimen	12.5mm
材積 Dimension	30 x 30 x 55cm
重量 Weight	9kgs

HT-8355V



HT-8622 HEAT GRADIENT TESTER 熱傾斜試驗機

- 本機係產生熱傾斜的效果，來測試包裝材料的熱封性，或求取布料或皮革的最大耐熱溫度。
- This apparatus produces, heat gradient for measuring of the heat seal of packing materials or to find the optimum temperature of test resistance of cloth and leather products.

溫度 Temperature	Rt~+200°C, RT-200 degree celsius
壓力 Pressure	0~4 kg/cm ² , 0-4kg/cm.sq
試件 Specimen	20 x 30mm
熱板間隔 Interval of heating plate	20mm
加熱板數 No. of heating plate	5組, 5 pieces
材積 Dimensions	60(L)x50(W)x85(H)cm
重量 Net weight(Approx.)	70kgs.
電源 Power	1Ø,220v

HT-8622



H T-8362D, HT-8041B

HT-8362D HYDROSTATIC TESTER

電子式耐水壓試驗機

JIS K6328, L1092, ISO 811, DIN 53886, BS 2823, AATCC 127

- 本機適用於纖維布、不織布、防水布、皮革、人造皮等材料之耐水壓測試。傳統之水柱試驗方法，操作不便，機台又佔空間。本機採桌上型設計，不佔空間，並使用壓力傳感器感應，配合電子數字LCD顯示，可顯示瞬間值及最大值，不但操作方便，更可透過列表機將測試結果列印出來。
- This machine is used to test the hydrostatic resistance for the materials of fabric cloth, non-woven cloth, waterproof cloth, leather, artificial leather...etc. Traditional design with a high water post is not easy to use and the users have to face that high size. This tester is of bench-top design, compact size with an LCD digital display, not only convenient to use and read, but also the test result can be printed out via a dot matrix printer (optional).

壓力範圍 Pressure range	5~30000mmH ₂ O (0.0005~3kg/cm ²)
解析度 Resolution	5 mmH ₂ O (0.0005kg/cm ²)
準確度 Accuracy	Better than ±1%以內
夾持內徑 Clamping diameter	ø113mm
加壓速度	
Pressurize speed	5~180ml/min (1kg/cm ² /min) adjustable 可調
試片面積 Sample area	100cm ²
水容量 Water capacity	300 ml (cc)
顯示方式 Method of display	電子數字 LCD 顯示 digital display
電源 Power supply	1ø, 220V, 50/60Hz 3A
重量 Weight	120 kgs
材積 Dimension	70 × 45 × 60cm

HT-8362D



HT-8041B IZOD IMPACT TESTING MACHINE

IZOD 衝擊試驗機

ASTM D-256, JIS K-7110, K-6911, K-6771, K-6819, K-6740, CNS-8768, B6068

- 衝擊試驗(Impact test)之目的在於將衝擊力於瞬間施加在試片上，將其打斷後，測定擊斷試片所吸收之能量，而以此能量來表示材料之衝擊值，一衝擊強度進而比較材料之韌性或脆性特別是測試低溫脆性，缺口脆性或回火脆性等。在工程上有許多結構或機件必須能經得起突然的強烈撞擊，而測試材料對這種突然撞擊造成破壞之抵抗能力的試驗稱之為衝擊試驗。
- esigned for testing the impact fracture strength of plastics, composites & metallic materials etc. Impact is applied to a test piece put on an anvil by a hammer brought up to a specified level and the absorbed energy required for the fracturing is read from the conversion table.

說明Type 機種Description	HI-5	HI-1.5	HI-1.0	HI-0.5	HI-0.3	HI-0.15
測試能力 Capacity(kgf-m)	5	150kg-cm	100kg-cm	50kg-cm	30kg-cm	15kg-cm
錘轉軸中心與打擊點之距離(mm) Distance between center of Hammer Revolving axis and strike point(mm)	600	400	400	310	310	310
錘刀半徑(mm) Radius of Hammer knife edge(mm)	1	0.8	0.8	0.8	0.8	0.8
錘刀刃角度 Angle of Hammer knife edge	75°	75°	75°	75°	75°	75°
錘上昇角度 Lift angle of Hammer(approx)	90°	150°	150°	150°	150°	150°
錘重 (公斤) Weight of Hammer (kg) approx	11.5	2.6	1.8	1.3	1.3	1.3
錘在衝擊點上的速度 (公尺/每秒) Speed of Hammer at impact point (m/sec) (approx)	3.4	3.8	3.8	3.35	3.35	3.35
尺寸大小：寬x深x高 (公分) Dimension(w)x(d)x(h)(cm)(approx)	50x75x140	38x58x79	38x58x79	32x50x65	32x50x65	32x50x65
機器重量 (公斤) Weight(approx)(kg)	180	70	65	50	50	50

HT-8041B



H T-8037, HT-8808, HT-8032

HT-8037 STANDARD LAUNDER TESTER

染色耐洗試驗機

- 將試件與鋼球置入試驗杯中，並在規定的溫度及時間下進行水洗。取出試件與灰色標比對，以判定其耐水洗堅牢度。
- Put specimen and steel ball, into the testing cup, and have the specimen laundered under requested temperature within certain period. Compare with gray scale after completing test.

試件尺寸 Specimen	10 × 5cm
溫度 Temperature	Rt~+100℃ (建議40,50,60,70,80℃) R.T-100℃(Suggesting temp 40, 50, 60, 70, 82℃)
速度 Rotation Speed	42 ± 2RPM/min
試驗杯 Testing Cup	Ø80mm, 高120mm, 容量450cc Ø80mm, H120mm Capacity 450cc
鋼球尺寸 Steel ball	Ø6.4mm
計時器 Timer	0~60分, 0-60min
材積 Dimension	110(W)x70(D)x134(H)cm
重量 Weight	160kg

HT-8037



HT-8808 SOFTENING TEMPERATURE TESTER

柔軟溫度試驗機

JIS A-5606, CNS 11210

- 本機係用來測試橡膠塑膠產品的軟化溫度，特別是車窗的防水橡膠或泥槽，以判斷其品質良否，或製程上的參考。
- This machine is good for testing products of rubbers and plastic, specially for testing the softening and temperature characteristics of anti-rain rubber strips and rubber strips for holding glass of mobile.

荷重 Load	34.23g
溫度範圍 Temperature range	-60℃~+100℃
皮帶輪直徑 Dia of belt wheel	6cm
橫跨距離 Transverse distance	4cm
材積 Dimension	Appr 40x46x100cm
重量 Net weight(Approx.)	約60kgs
電源 Power	1Ø, 220v

HT-8808



HT-8032 WRAP REEL 電動紗支測碼機

- 本機係用以繞取所需長度的紗線，藉以測定其理紗強度或判定支數使用。本機配有自動計數器，可自動計數，並有剎車馬達，可立即停止測試。
- This machine is to get a certain length of yarn by winding to test the resistance of yarn and the number of wrap. This is equipped with automatic digital counter which can count automatically. And a brake motor which can stop testing automatically as soon as the preset.

試件數 Testing Specimen Available	5 5 Threads
計數器 Counter	電子式六位數 6-digit Auto-Counter
馬達 Motor	1/4HP
材積 Dimension	93(W)x55(D)x65(H)cm
重量 N.weight(Approx.)	約72kgs
電源 Power	1Ø, 110/220V

HT-8032



H T-8135, HT-8132, HT-8131

HT-8135 SCORCH TESTER 耐昇華試驗機

- 將試件置於固定溫度之熱板間，於固定時間後，取出試件，冷卻4小時後，與灰色標比對，藉以判定其染色耐昇華等級。
- Compress the specimen for certain period at requested temperature. Take out and cool for 4 hours. Then compare with the gray scale.

測試方法 Testing method	溫度 Temperature(°C)	時間 Time(s)
A	150±2	30
B	180±2	30
C	200±2	30

試件尺寸 Specimen	100 × 40mm
加熱板 Heating plate	120 × 60mm
壓力 Pressure	40±10g/cm ²
溫度 Temperature	Rt-300°C(Suggestive temp.150, 180, 200°C)
材積 Dimension	43 × 55 × 36cm
重量 Weight	22kg

HT-8132 YARN INSPECTION TESTER

外觀均勻度檢查機

- 將各種織線捲繞於一黑板上，即可輕易看出不良絲線、棉球或色斑，藉以判定其外觀等級。
- By lining and wrapping the various kinds of thread on the black board can easily observe the defects of floss, cotton grain, yarn stain.

黑板尺寸 Reeling Board	(W)7 1/2" ×(H)12"
密度 Density	11~45條/每英寸, 11-45(pcs)/inch(Adjustable)
材積 Dimension	70 × 57 × 47cm
重量 Net weight	40kg

HT-8131 CONDITIONING OVEN 回潮率烘箱

- 本機係將試件稱重後，置入烘箱中烘乾後再稱重，求其回潮率或含水率。
- Weighing the specimen before test, and dry at an absolute constant dry condition, Measure the wet-back rate and contain rate.

回潮率 Wet-back rate:

$$\text{回潮率} = \frac{\text{烘前重} - \text{烘後重}}{\text{烘後重}} \times 100$$

$$\text{Wet-back rate} = \frac{\text{Weigh before drying} - \text{weigh after drying}}{\text{Weigh after drying}} \times 100$$

Contain rate:

$$\text{回潮率} = \frac{\text{烘前重} - \text{烘後重}}{\text{烘後重}} \times 100$$

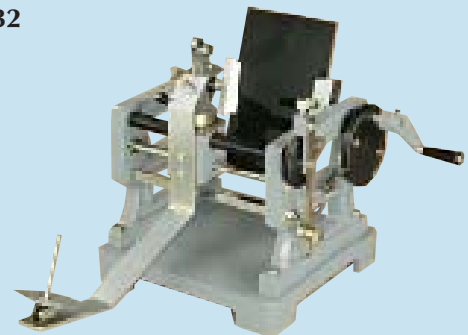
$$\text{Contain rate} = \frac{\text{Weigh before drying} - \text{weigh after drying}}{\text{Weigh after drying}} \times 100$$

溫度範圍 Temperature	Rt~200°C
天平 Balance	0.01-310g
內徑 Internal Dimension	35 × 30 × 35cm
材積 Dimension	78(W)x35(D)x110(H)cm
重量 Weight	72kg
電源 Power source	1Ø, 220V

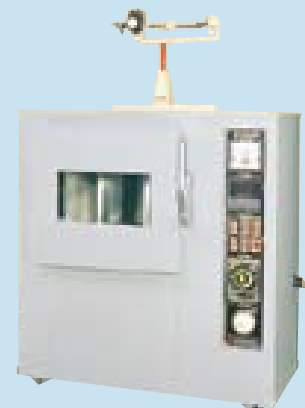
HT-8135



HT-8132



HT-8131



H T-8133, HT-8637, HT-8640

HT-8133 WRAP BLOCK 棉條圓筒測長機

- 本機用以量測固定長度之棉條，檢查及質量，以做為製程及品管上的參考。
- This tester is used to measure the length of the cotton stripe or coarse yarn and weighing for further steps of quality control.

圓筒 Drum	1 碼或1 米供選擇. 1 yard, 1m(chooseable)
試件數 Specimen	3條 3pcs
材積 Dimension	60(W)x45(D)x48(H)cm
重量 Weight	55kg

HT-8133



HT-8637 COLOR SAMPLE CARD WINDER

電動搖色卡機

- 本機係用來將色線捲繞於編上號碼的卡片上，作為對色或製作樣品型錄之用。
- This machine can wind up the thread to certain area on a card to observe the surface structure and color of the thread.

卡尺寸 Size of card	長140~280mm 寬30~70mm 厚0.6~1mm 1.Length: 140-280mm 2.Width: 30-70mm 3.Thickness: 0.6-1mm
捲繞幅度 Winding amplitude	150mm可調 150mm(adjustable)
捲繞速度 Winding speed	100-600R.P.M.
試件數 No. of sample	8 colors card
電源 Power source	110/220V, 50/60HZ
材積 Dimension	90 × 30 × 60cm
重量 Weight	約 appr. 50kg

HT-8637



HT-8640 SPRAY TESTER 沾水度測定器

CNS-10461, 1479, JIS-L1096, 1018, 1092, K6328 ASTM-D583-54 AATCC-22-52

- 本機係利用灑水的方式來測定被測物表面的防水度。
- This tester is used to determine the waterproof characteristics for the surface of the samples.

試件尺寸 Specimen	18 × 18cm	
試件架 Specimen Frame	Ø152mm	
試件角度 Slope of specimen	45°	
噴嘴孔, Hole of Nozzle	19孔(Holes), φ0.88mm	
噴嘴與試件距離 Space Between Nozzle & Specimen	152mm	
材積 Dimension (W × D × H)	25 × 30 × 60mm	
重量 Weight	10kg	
判定標準		
1級	表面全部均有濕	50分
2級	表面大部份有濕	70分
3級	表面呈分散狀之濕	80分
4級	表面稍濕	90分
5級	表面沒有濕	100分

HT-8640



H T-8639A, HT-8639B, HT-0601, HT-8807

HT-8639 TWIST COUNTER 撚度計

CNC-1479,3958,2279,JIS-L1095

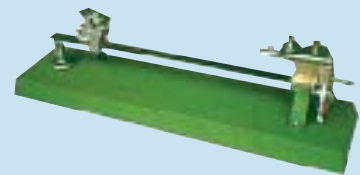
- 本機係用來測試單紗或撚線的撚度，有電動及手動供選擇。
- This is to test the single thread or twists of the twisting degree of each inch silk thread by revolving to loose the thread.

型式 Model	HT-8639A (電動 Motor)	HT-8639B (手動 Manual)
顯示方式 Cycles Indication	數字 Digital Display	指針 Dial Scale
轉速 Rotating Speed	可調 Adjustable	
馬達 Motor	6W, DC馬達 6W.DC Motor	— —
材積 Dimension	72(W)x18(D)x30(H)cm	56(W)x16(D)x18(H)cm
重量 Weight	7kg	3kg

HT-8639A



HT-8639B



HT-0601 VISCOMETER 黏度計

- 此粘度計適合不同的產業使用。如油漆、接著劑、重油墨水、食品、化妝品、橡膠、紙漿、化學、石油產品等。使用方便，適用測定粘度及品質管理。
- This is used to measure the viscosity of various solutions for different industries.
- This would be a good reference for product development and improvement.

型式 Type	VT-03 低黏度用	VT-04 高黏度用
黏度測定範圍 Testing range	2-33, 15-150, 50-330 CP	0.3-13, 3-150, 100-4000 P (1P = 100CP)
迴轉速度 Rotating speed	62.5 rpm	
電源 Power	DC 1.5V ×4 乾電池 battery (亦可選配使用變壓器 optional AC adopter)	
重量 Weight	約 580g	
材積 Dimensions	18 ×10 ×4cm	

HT-0601



HT-8807 LABORATORY ROLL MILL

試驗用雙滾筒混合機

- 本機為橡膠工業重要實驗設備之一，其主要的功能在於使產品能符合客戶所要求的品質及顏色，為了達到客戶的要求，再將實驗的結果及其比率用於生產線，而本機也就是將試驗用原料及配合劑加以混合均勻之設備。
- This laboratory roll mill is applied throughout the experiment of rubber & plastic industry. Owing to its small feeding, it's advantageous for keeping from the great losses for the experiment failed of success. It's used for masticating or breaking down various kinds of natural and synthetic rubber. For the application range of rubber shoes, soles and heels tire and tubes, as well as PVC, EVA sheet, extending to chemical industry.

型式 Type	A	B	C
規格尺寸 Size of rolls	6"Ø ×13"(L)	8"Ø ×20"(L)	10"Ø ×24"(L)
動力需求 Power required	5 HP	7.5HP	15HP
混合容量 Capacity	0.5~1 kgs	2~3 kgs	5~7 kgs

HT-8807





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本公司保有變更設計的權利，如有更改不另行通知。

Note: The specifications are subject to change without notice.