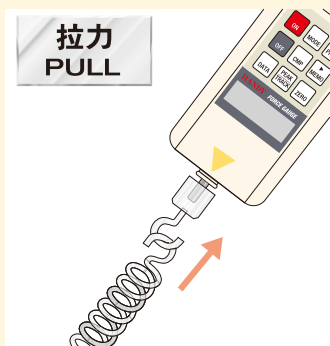


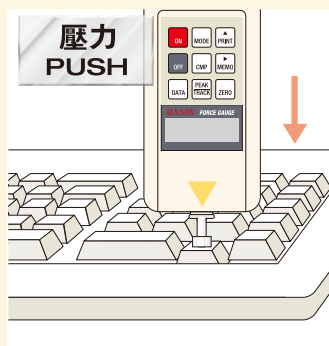
手持式拉壓力計適用於各種不同用途之測試

The HANDY force gauges perform their maximum ability in all kind of force measurement purpose.



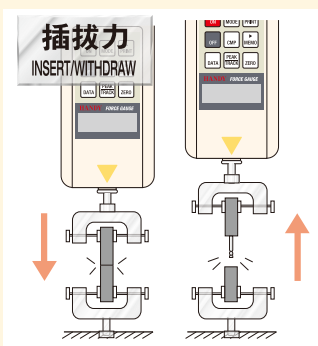
拉簧、橡膠等的力量簡易測定。

EXTENSION AND COMPRESSION FORCE MEASUREMENT; simple measurement of extension spring and rubber materials.



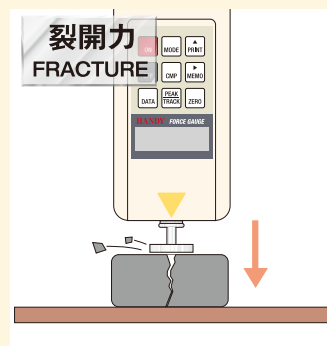
開關按鍵的操作力測定：電話、計算機、遙控器。

TOUCH FORCE MEASUREMENT; checking operating force of key switches on telephone, electric calculator and remote controller.



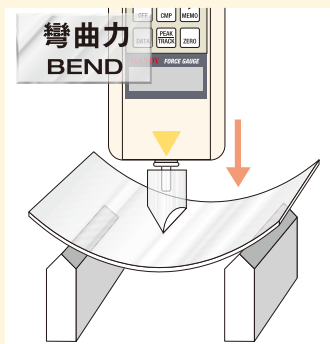
可同時測試連接器的插入力和拔去力。

INSERTION/WITHDRAW FORCE MEASUREMENT; both of insertion and withdraw force of connectors can be measured at a time.



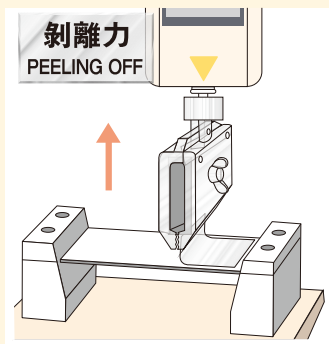
玻璃、碳、陶瓷、塑膠等新材料的裂開力峰值抓取。

FRACTURE LOAD TEST; detection of maximum load on glass, carbons, ceramics, plastics and new materials.



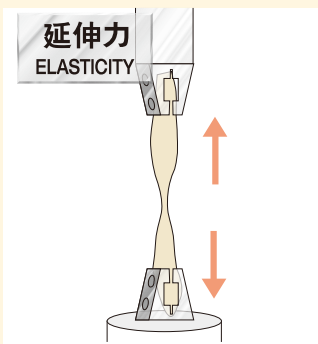
薄板、圓棒、木材等的彎曲力測試。

BENDING LOAD TEST; detection of maximum load on metal plate, rod and wood materials.



剝離測試：膠帶、PCB、黏著膠帶等的剝離測試。

ADHESION FORCE MEASUREMENT; detection of adhesive force when adhesive tapes or materials on PCB are peeled off.



延伸試驗：橡膠新材料的拉伸測試。

ELASTICITY MEASUREMENT; rubbers, new materials and other elastic materials.



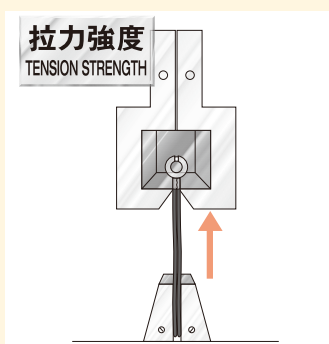
硬度測試：藥錠、水果、口紅、黏度的測試。

HARDNESS AND VISCOSITY TEST; checking hardness of drug tablets and fruits and viscosity of lipsticks and other paste materials.



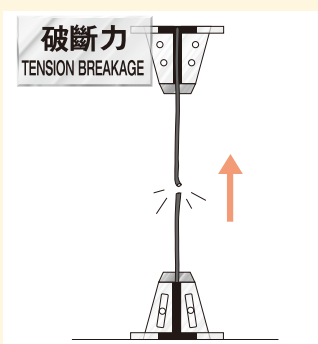
易開罐、拉蓋罐等在拉開時的峰值抓取。

POP TEST; measurement of force for opening can's pull-tub.



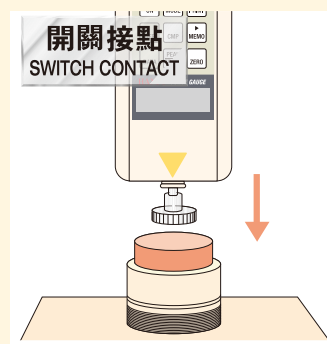
拉力強度試驗：端子的拉力強度、鉚接強度試驗。

TENSION STRENGTH TEST; checking strength of electric terminal's end when tensed.



破斷測試：電線、銅線等的拉力破斷試驗。

TENSIBILITY TEST; checking tensibility of electric wire and copper wire.



開關接點觸動力測試：機械式接點的觸動力測試。

MEASUREMENT OF CONTACTING POINT FORCE; detection of operating force of mechanical switch and detection of changing condition of switch contact.

HANDY電子式拉力計HF系列

HANDY DIGITAL FORCE GAUGE HF SERIES

HF系列數位電子式拉壓力計，不僅是做些簡單的荷重測試而已，不論在各式各樣的產品測試（如：開關測試、連接器測試、破壞測試等），均可當做專用機使用。還有，測試結果的資料值，只要透過CENTRONICS介面，即可直接將所有資料值統計、分析處理，列印於個人電腦用的印表機上，不須另外購買列表機，降低成本，提高效率。

The HF series can be used not only for simple measurement of tension/compression force but also used for various testing purposes; such as switch test, connector insertion/withdraw test, and fracture test. Measured result and statistical processed result can be output for printing on your printer and also transmitted to your computer system.

Characteristics 特點

統計處理·檢查表格式的列印

STATISTICAL PROCESSING & PRINTING OF INSPECTION REPORT

利用現有個人電腦所用的列表機透過CENTRONICS介面（選購配備）即可自動計算出標準偏差值、工程能力指數。並製成檢查表格式，列印出來。

The HF series can calculate figures of the standard deviation and the process capability index and those figures can be printed out on your printer in form of the inspection report when the CENTRONICS INTERFACE (OPTIONAL) is adopted.

比較功能 COMPARATOR FUNCTION

設定上下限的公差值，可執行GO、NG的判定。

Initial input of the tolerance limit (upper/lower) enables the device to judge the measured result as GO/NO.

記憶功能 MEMORY FUNCTION

能夠記憶256次（512個）測試資料，並可輸出信號（有自動記憶功能）。

Measured results will be automatically memorized up to 256 measurements.

高精度高解析度

HIGH ACCURACY, HIGH RESOLUTION

具有精度： $\pm 0.2\%$ F.S.、重覆精度： $\pm 0.1\%$ F.S.的高精度，並且實現在1kgf的全記得刻度，最小讀值為0.1gf的1/10000解析度。

The HF series have achieved extremely high accuracy; such as $\pm 0.2\%$ FS of accuracy and $\pm 0.1\%$ FS of repeatable accuracy. And also, the HF series perform extremely high resolution. For example, the 1kgf capable device can indicate minimum 0.1gf. It means 1/10000 resolution.

多功能 MULTIPLE FUNCTIONS

標準峰值、插拔測試、插拔的壓力峰值、插拔的拉力峰值、抓取接點信號值、設定列表機種類、設定區域的N值等多種機能均可輕易設定。

Initial setting on the device is possible for measurement of peak force, insertion/withdraw force, insertion compression peak force, withdraw extension peak force and holding force at contact point. Also, the device is applicable for setting of various printing modes, input of local Newton value and other various modes settings.

3種單位變換 UNIT CONVERSION

可換N、Kgf (gf)、lbf的計測單位。

It is possible to convert the graduations of N, kgf(gf) or lbf on the device.

抓取峰值功能 PEAK HOLD FUNCTION

一次的操作，可同時測出壓力、拉力（插入、拔出）的峰值。

Single operation can perform measurement of both compression peak data at insertion and extension peak data at withdraw.

操作簡單 EASY OPERATION

因為是一部多功能的測試器，所以在按鍵的配置設計及操作的優異性均是一流的。

Buttons are well arranged for easy operation to perform multipurpose measurement.

自動電源切斷功能 AUTOMATIC POWER OFF

為了省電及保護本機，具有可設定01~99分的電源自動切斷功能。

The HF series have automatic power-off function to save battery and to keep the device safe. Power off time can be changed at the range of 01-99 min.

地域牛頓(N)值的設定功能

LOCAL NEWTON VALUE INPUT

依據地域不同，會有不一樣的地心引力。本機可輸入不同地域的牛頓(N)值，以消除因地域不同所產生的引力值差異而造成的誤差。

The terrestrial gravitation varies with where measurement is performed. Measurement error by gravity difference will be eliminated by inputting the local Newton value according to the measurement place.

RS-232C設定功能 RS232C SETTING FUNCTION

可設定和電腦連線的RS-232C資料值。

It is possible to set data bit length, baud rate, stop bit length and parity bit to connect with your computer.

多種信號輸出功能 VARIOUS OUTPUT

可輸出RS-232C、類比、數位、接點、比較器等信號。

Various options are offered for outputs; RS-232C output, analog output, digimatic output and switch output.

※列表機是依據ASCII做Text形式的列印。

※Text style printing by ASCII code.

高精度 高分解能 多功能

HIGH ACCURACY
HIGH RESOLUTION
MULTIPLE FUNCTION

(ON)電源ON按鍵

Power On switch

打開電源，同時會有蜂鳴響聲，螢幕上會顯示機型名稱。

When this button is pushed, the power will be on with beeping and the LCD display indicates Model number and changes to measured figure.

(OFF)電源OFF按鍵

Power Off switch

按下此鍵，電源會關掉。

When this button is pushed, the power will be off.

DATA

此按鍵可執行測試資料值的記憶、清除、叫出和信號輸出。

Data will be memorized, cleared and read out from the memorized data with this button.

MODE

可做測試規範、感應範圍、荷重上限、一個群組資料數、應答速度、單位、極性更換、列表、自動電源切斷時間、地域牛頓(N)值、RS-232C等的設定。

This button is used for changing various modes of the device; testing mode, measurement range, load limit, batch unit, response unit, printer setting, automatic-off time, local Newton value, output setting of RS-232C and baud rate.

CMP

可執行比較功能的ON/OFF和範圍設定。

This button is used for setting on/off and range of compare function.

PEAK/TRACK

可切换峰值和瞬間的顯示。

This button can convert the indication of the peak load to the tracking load and vice versa.

PRINT

列印顯示值。若按2秒以上，可列印記憶資料值，並具有在MODE設定中時，變更設定值的功能。

The indicated value will be printed out when this button is pushed. When the button is kept pressed for over 2 sec., the memorized data will be printed out. During the mode setting, it will work to change the setting value.

MEMO

記憶測試資料值，記憶的筆數會有1秒鐘在螢幕上顯示，並用於MODE設定時，設定值的位數更換。

When this button is pushed measured data will be automatically memorized. After the data is memorized, the number of memorized data will be indicated for a second. During the mode setting, it will be used for changing digits.

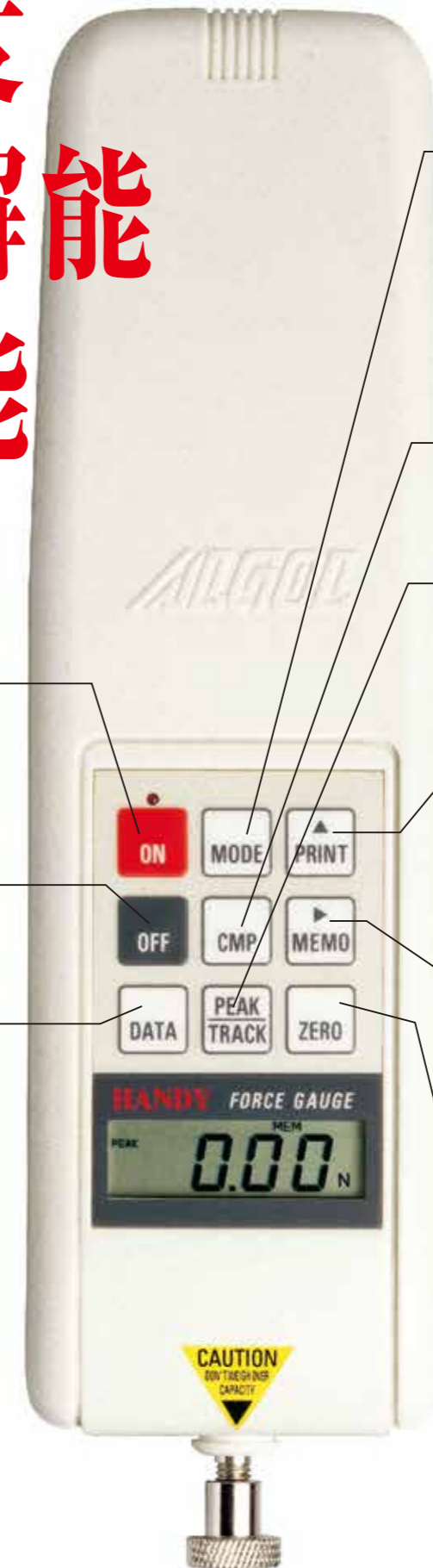
ZERO

將安裝於感測部上的配件或夾具的重量歸零(空重)使螢幕上的顯示值為“0”。

When this button is pushed, the net weight of attachments will be adjusted.



HANDY HF系列標準品
HANDY HF Series complete set

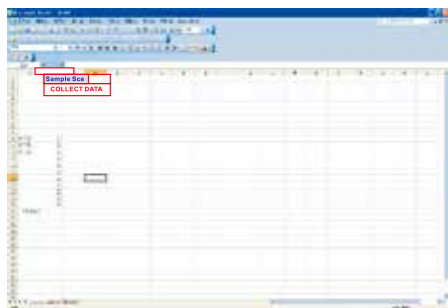


Application 信號輸出體系

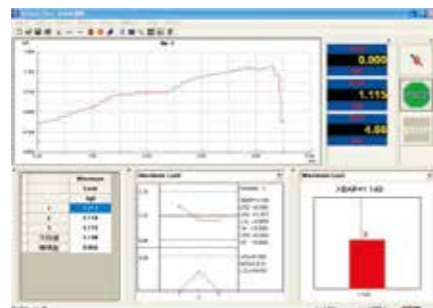


Software 軟體

記憶 資料 讀取 軟體
Memory Data Read Software HOP-RS Interface (Windows上應用軟體)



EXCEL資料讀入畫面
EXCEL DATA READ SCREEN (HANDY)



圖形畫面
GRAPH SCREEN (QCFORCE)

可以很簡單地將儲存於拉壓力計 (HANDY) 內的資料讀到 EXCEL 裡。讀入的資料利用 EXCEL 的功能做圖形化處理或檢查報表, 均可隨心所欲。

This optional software enables your computer to read the data stored in the Handy Force gauge. Pictures shown left are examples of processed data by Microsoft Excel.

Specification 規格

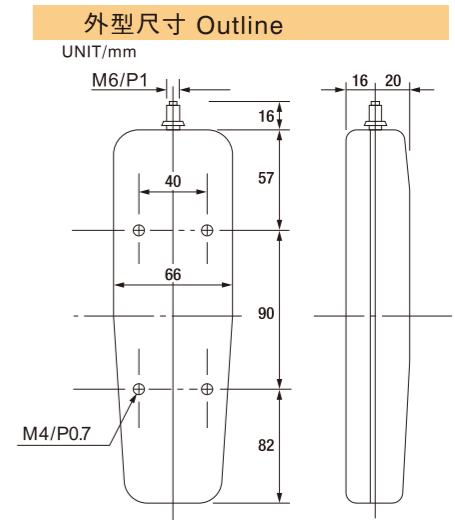
HF 系列

型號 Model	單位 Unit	最大荷重 Max. Load			
		N	Kgf	gf	lbf
HF-1		10.000	1.000	1000.0	2.204
HF-2		20.00	2.000	2000	4.408
HF-5		50.00	5.000	5000	11.02
HF-10		100.00	10.000	10000	22.04
HF-20		200.0	20.00	-----	44.08
HF-50		500.0	50.00	-----	110.2
HF-100		1000.0	100.00	-----	220.4

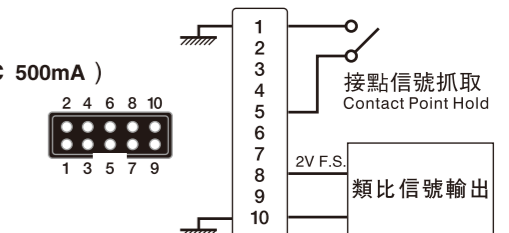
最小讀值 Min.Resolution			
N	Kgf	gf	lbf
0.001	0.001	0.1	0.001
0.01	0.001	1	0.001
0.01	0.001	1	0.01
0.01	0.001	1	0.01
0.1	0.01	-----	0.01
0.1	0.01	-----	0.1
0.1	0.01	-----	0.1

※ HF-1, HF-10及HF-100三種規格之顯示值超過9999時, 其千位數字會變成1←→0交互顯示, 表示其顯示值為10000。
※ When display value is bigger than 9999 on HF-1, HF-10, and HF-100, the 1000th digit will exchange between 1 and 0. It means the 1000th digit display value is 10000.

- **測定單位** : N, kgf, (gf), lbf 切換式
MEASUREMENT UNIT
- **測試精度** : ± 0.2% F.S. 以下
ACCURACY
- **再現精度** : ± 0.1% F.S. 以下
REPEATABILITY
- **應答速度** : 10~320HZ、6段式
RESPONSE SPEED 6 Steps
- **顯示幕** : 4位數液晶顯示幕 (模組化LCD)
DISPLAY 4 DIGIT LCD DISPLAY
- **計測方式** : 最大值 · 瞬間值
MEASUREMENT MAXIMUM VALUE · MOMENT VALUE
- **取樣速度** : 640回/秒
SAMPLING 640 TIMES PER SEC.
- **容許荷重** : 150% (在105%時, 有蜂鳴聲警告)
ALLOWABLE LOAD 150% (ALARM BUZZER AT 105%)
- **A/D變換** : 16bit 逐次變換方式
A/D CONVERTER 16bit
- **輸出信號** : 類比輸出 ± 2V F.S.
STANDARD: ANALOG OUTPUT ± 2V F.S.
Digimatic輸出 (三豐公司) (選購)
OPTIONAL: PRINTER CONNECTING, DIGIMATIC OUTPUT,
比較信號輸出 (選購)
COMPARATOR CONNECTING,
RS-232C輸出 (選購)
RS-232C INTERFACE.
- **連續使用時間** : 約10小時 (滿充電時 使用溫度25°C)
CONTINUOUS OPERATION TIME : APPROX. 10 HOURS (FULL CHARGED AT 25°C)
- **充電時間** : 約6小時
CHARGING TIME APPROX. 6 HOURS
- **使用溫度** : 0~+40°C
OPERATION TEMPERATURE
- **電源** : 鎳氫充電電池、AC整流器充電兼用 (100-240V · 12VDC 500mA)
POWER NI-MH BATTERY, A/C ADAPTOR FOR CHARGING
- **機體重量** : 約500g
WEIGHT
- **標準附屬品** : 測試配件、AC整流器、信號輸出線、專用收藏盒
STANDARD ACCESSORIES ATTACHMENT, A/C ADAPTER, CABLES, CASE



介面連接器 Interface Connector



HF-T 扭力計
HF-T Torsion Gauge



矽橡膠按鍵專用測試台 JSV-100N
JSV-100N Small Vertical Test Stand

HANDY機械式拉壓力計AN/AK/NK系列

HANDY ANALOG FORCE GAUGE

本機械式(Analog)拉壓力計是一支體型輕巧、操作簡單，易於攜帶，且精度高之多用途品管試驗用拉壓力計。峰值(PEAK)和瞬間值(TRACK)的轉換，只要轉動設定鈕即可，操作輕而易舉，迅速準確。備有AK(Kgf刻度板)、AN(N刻度板)、NK(Kgf和N雙刻度板)三種類，範圍從1kgf(10N)至50kgf(500N)可供選擇。

The AN/NK/AK series are analog force gauges with compact size and high accuracy. They are easy to operate and handy to carry out. Single click on a knob on the device will convert the movement of the indication needle from the peak force indication (the needle stands still indicating peak force) to the tracking indication (the needle moves in accordance with change of force). As three types of scales are available and each type has measurement capacity variations, you can choose the most suitable graduation from the range of 10N (1 Kgf) to 500N (50 Kgf) for your measurement purpose. AK: Kilogram scale, AN: Newton scale and NK: Newton and Kilogram scale.



Characteristics 特點

高解析度 HIGH RESOLUTION

1/200的刻度板清晰易讀。
The device provides 1/200 resolution and graduations scale is clear.

高精度 HIGH ACCURACY

精度為全刻度的0.5%。
0.5% of full scale.

操作性佳 EASY OPERATION

旋轉設定鈕，峰值的抓取或瞬間值的測試，輕而易舉。
Single click can make a measurement conversion from peak force to tracking force.

可同時看到N和Kgf兩種單位 HIGH RESOLUTION

不論N的單位或Kgf單位均可在1支拉壓力計上做到，一舉兩得。
The scales of NK series provide both Newton and kgf graduations.

機體輕巧 LIGHT WEIGHT

機體重量輕，單手操作很靈活。
The device weight is so light that single hand operation is possible.

規格豐富 VARIATIONS

根據用途，從1kgf至50kgf共8種規格及3種刻度板可供選擇。
The measurement capacity varies 8 types (1kgf/1N-50Kgf/500N) and the graduation scale varies 3 types (AK/AN/NK) so that you can choose the most suitable device for your purpose.



配合試驗機台，精度更佳 TEST STANDS

安裝於試驗機台上使用，測試值穩定，再現精度高，使品質更有保障。（備有各種手動和自動試驗機台供選擇）

More accurate and more stable measurement is possible when the device is attached on a test stand. The original test stands are available and used for both digital and analog force gauge.

Test Stands 專用測試機台

MODEL NO. JSV-200H



手動立式機台

Vertical Manual Test Stand

最大荷重 (Capacity)	200N
測試衝程 (Stroke)	100mm
最大間距 (Interval)	180mm

MODEL NO. JSV-500D



電動立式機台

Vertical Electric Test Stand

最大荷重 (Capacity)	500N
測試衝程 (Stroke)	150mm
最大間距 (Interval)	230mm

MODEL NO. JSV-100N



手動立式機台

Vertical Manual Test Stand

最大荷重 (Capacity)	20N
測試衝程 (Stroke)	20mm
最大間距 (Interval)	60mm

MODEL NO. JSV-500L



手動立式機台

Vertical Manual Test Stand

最大荷重 (Capacity)	500N
測試衝程 (Stroke)	100mm
最大間距 (Interval)	400mm

MODEL NO. JSV-H1000



伺服系統立式機台

Vertical Electric Test Stand

最大荷重 (Capacity)	1000N(100kgf)
測試衝程 (Stroke)	250mm
最大間距 (Interval)	280mm

MODEL NO. JSH-H1000



伺服系統卧式機台

Horizontal Manual Test Stand

最大荷重 (Capacity)	1000N(100kgf)
測試衝程 (Stroke)	250mm
最大間距 (Interval)	260mm

Specification 規格

型號 . No.	最大測試範圍 Max. Load	最小刻度 Min. Load	衝程 Stroke
AN-10	10N	0.05N	10mm
AN-20	20N	0.1N	10mm
AN-30	30N	0.2N	10mm
AN-50	50N	0.25N	10mm
AN-100	100N	0.5N	10mm
AN-200	200N	1N	10mm
AN-300	300N	2N	10mm
AN-500	500N	2.5N	10mm

型號 . No.	最大測試範圍 Max. Load	最小刻度 Min. Load	衝程 Stroke
NK-10	10N 1kgf	0.05N 5gf	10mm
NK-20	20N 2kgf	0.1N 10gf	10mm
NK-30	30N 3kgf	0.2N 20gf	10mm
NK-50	50N 5kgf	0.25N 25gf	10mm
NK-100	100N 10kgf	0.5N 50gf	10mm
NK-200	200N 20kgf	1N 100gf	10mm
NK-300	300N 30kgf	2N 200gf	10mm
NK-500	500N 50kgf	2.5N 250gf	10mm

型號 . No.	最大測試範圍 Max. Load	最小刻度 Min. Load	衝程 Stroke
AK-1	1kgf	5gf	10mm
AK-2	2kgf	10gf	10mm
AK-3	3kgf	20gf	10mm
AK-5	5kgf	25gf	10mm
AK-10	10kgf	50gf	10mm
AK-20	20kgf	100gf	10mm
AK-30	30kgf	200gf	10mm
AK-50	50kgf	250gf	10mm