



U-550

SONIC BELT TENSION METER

NEW

High sensitivity
Quick measurement
Organic EL display



SONIC TENSION METER

U-550

What's NEW of U-550, from customers voice

■ Improvement of measurement sensitivity

Improved measurement sensitivity from low tension to high tension by optimizing the measurement range and enhancing the low range measurement sensitivity.



■ Organic EL display

Increased viewing angle and improved visibility in dimly lit areas by using an organic EL display



U-550

■ Reduction of measurement time

Contributes to reducing operator stress and improving productivity by significantly reducing measurement time.

1.2sec. → 0.2sec.
old model U-550



old model

■ Enhancement of PC connecting function

Any name can be set for 40 measurement conditions saved in internal memory by connecting to a PC.



old model

U-550

SONIC BELT TENSION METER U-550

Model name	U-550
Model number	TM-550
Measurable range	10Hz ~ 5,000Hz
Battery	Alkaline battery (Triple A type × 2 pieces)
Size	W59×T26×L160mm
Mass	120g
Accessories	Flexible type sensor (TM-AMM) Soft case for carrying Two triple A batteries USB cable is not attached.

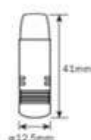
Environment friendly products

Gates unitta Asia products are RoHS2 compliant not only for belts and pulleys, but also for sonic tension meter U550.

Basic function

■ High quality sensor

This sensor has frequency characteristics specialized for belt tension measurement.



■ Preinstalled belt unit mass

Pre-installed unit mass of 69 types of Gates unitta Asia belts

■ Automatic trigger

Continuous measurement is possible by pressing the "measur" button once.

■ Large-capacity memory

500 measurement results and 40 measurement conditions are saved in internal memory

■ Judgment of measurement results

Upper and lower limit values for measurement result judgment can be set by the PC connection function

■ Data output to PC

Recorded measurement results can be output to a PC via USB connection

■ Wide measurement range

A wide frequency range of 10 to 5000 Hz can be measured by selecting 3 types of ranges

■ Measurement in a narrow space

Small sensor enables measurement in narrow space.
And there is also an optional sensor to support various conditions

■ Automatic cancellation of background noise

Automatically analyzes background noise when the power is turned on and optimizes sensor sensitivity

■ Automatic power off

Automatically powers off to prevent battery drain without operation for 5 minutes

We will issue the traceability system diagram and calibration certificate for ISO9001

NON-CONTACT ACCURATE MEASUREMENT BY SONIC ANALYSIS

Anyone can easily measure the belt tension with this tension meter..



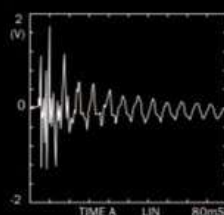
Measurement method



Measurement principle of U-550

When we make a belt between pulleys vibrate by giving impact, it starts to oscillate irregularly, but gradually it oscillates inherent regular moves. In the past, there was no easily implemented device which could catch these small waves. We succeeded in catching the period of wave pattern relatively easily by developing a data handling method to capture the vibration frequency that made full use of microcomputer. As for the system, sensor detects the vibration waveform; microcomputer calculates the character vibration number by processing the data. It can measure tension value more accurate than calculation formula in the program.

Patent: No.1931781



$$\text{Tension : } T_o = 4 \times M \times W \times S^2 \times f^2 \times 10^{-9} \text{ N}$$

T_o : Tension

M : Unit mass (g/mm width x m length)

W : Belt width or number of ribs (wires) (mm/R)

S : Measured span length (mm)

f : Horizontal characteristic frequency (Hz)

OPTION SENSOR (Capable of using for U-508, U-507, U-505, U-305, and U-303)

Flat flexible sensor (TM-YOKO)



This comes in the free form of the flat shape with thickness 10mm and 20mm in width. Especially suitable for finding the right angle direction in a particularly small place.
(Total length is 170mm)

Long arm sensor (TM-LONG2)



Entire arm length is 350mm. By using this sensor, it is possible to measure when the main body is hard to reach.
(Sensor ϕ : 12.5mm)

Cord type sensor (TM-COM)



Because the size of this sensor is a narrow path of ϕ 12.5mm, it is measurable by every place.
(Entire arm length is 1m)

Electromagnetic sensor (TM-DGS)



This reacts to the electromagnetic vibration, unaffected by the background noise. The measurement is possible under the vibration decrement early. However, an application such as the pasting of a thin magnetic film or the magnetic paint is necessary for a measurement side in the case of a rubber belt.
(Entire arm length is 1m)

(Common specification / Measurable frequency range: 10Hz~5,000Hz, RoHS2 certified equipment)

OPTION

Calibration device (TM-OS1)

For U-550, U-508, U-507, U-505, U-305, U-303 series
25, 90, 500, 2K, 4KHz, total 5 kinds of vibration
(signal wave) are able to be transmitted.



(RoHS2 certified equipment)

Feature	Dispatch frequency	Frequency range	Output power waviness	Distortion rate	Output voltage
Special device for certifying the frequency of sonic wave tension meter (Oscillation transmitter)	25Hz,90Hz, 500Hz,2kHz 4kHz	Less than 0.1%	Sign wave	With in 1%	20mV (P-P)
Consumption current	Power source		Overall size	Mass	Usage environment
50mA (At the time of output) Under 10mA (Not at the time of output)	Size AA battery × 4 pieces AC adaptor (DC6V 50mA)		W155×H46 ×D134mm	300g	Less than -10~50°C 80% (Non dewfall)

Safety precautions

- Please read & follow these precautions carefully.
- Please measure the tensile force after confirming that the machine has been turned off.
- Do not use for the purpose other than measuring tension.
- Do not put liquid such as water or solvents on the meter. Please handle with adequate care.

EAST ASIA & INDIA REGIONAL HQ

3A International Business Park,
#10-01/05 ICON@IBP, Tower A,
Singapore 609935

Tel: +65 6832 2368
Fax: +65 6659 1607

GATES UNITTA ASIA TRADING COMPANY PTE LTD

Gedung Alamanda Tower Lantai 25,
Jalan Tb. Simatupang Kav.23-24,
Kelurahan Cilandak Barat Kecamatan
Cilandak Jakarta Selatan 12430
Indonesia

Tel: +62-21-2965-7989

GATES INDUSTRIAL & AUTOMOTIVE (MALAYSIA) SDN BHD

Suite 9.01, Level 9, Menara Summit,
Persiaran Kewajipan, USJ 1, UEP,
47600 Subang Jaya, Selangor
Malaysia

Tel: +60-3-8601-7183 or 7184

GATES UNITTA (THAILAND) CO., LTD.

Eastern Seaboard Industrial Estate
64/89 M.4 T.Puakdang,
A.Pluakdang, Rayong 21140
Thailand

Tel: +66 38 954 361
Fax: +66 38 954 362



For enquiries please contact Gates East Asia & India HQ
Email : Marketing.GIS@gates.com



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GATES BELT TENSION METER SONIC 550C

ACCURATE AND CONSISTENT BELT TENSION MEASUREMENTS

Do you need to establish a specific drive belt tension for your machine applications? Then reach for the **Gates belt tension meter SONIC 550C** and determine the degree of loads and tension of your belt installations immediately and with utmost precision.

Applicable to a V-belt, a multi ribbed belt or a synchronous belt, the device analyses sound waves from the belt through the sensor and delivers you the **accurate tension measurement without delay**, which is essential for the optimum performance and reliability of your belt drives. Belt pretension data can be determined by using Gates DesignFlex™ Pro™ Drive design software, available on Gates.com.

The Gates belt tension meter SONIC 550C ensures a **smooth user experience** including an easier reading of data thanks to its high definition OLED display. The device is compact, convenient to use and precise.

FEATURES + BENEFITS

- Suited for multi-ribbed, V- and synchronous belts
- Measuring accuracy: $\pm 1\%$
- Double display possible (Newton and/or Hz)
- Auto shutdown after 5 min. of inactivity
- CE approved – RoHS compatible
- Auto gain control
- Compact model: 160 mm x 26 mm x 59 mm (H x D x W)
- 40 storage registers
- **NEW** OLED screen with optimised resolution
- **IMPROVED** frequency ranges:
LOW (10-50 Hz),
STANDARD (10-1000 Hz),
HIGH (900-5000 Hz)

PERFECT TENSION OUTPUT FOR OPTIMUM BELT PERFORMANCE AND RELIABILITY


DRIVEN BY POSSIBILITY™

THE PERFECT PACKAGE FOR YOUR NEEDS

THE NEW SONIC 550C TENSION METER IS AVAILABLE ALONG WITH ACOUSTIC SENSORS

Standard package (PN 7420-00550)

In each standard package, a flexible acoustic arm sensor is included. Easily connect the sensor to your Sonic 550C Tension Meter thanks to male – female connectors on both devices. Simple and practical!

- 170 mm. arm length
- Range: 10 – 5.000 Hz

Additional cord sensor (PN 7420-00206)

- 1.000 mm. cord length
- Range: 10 – 5.000 Hz

Additional inductive sensor (PN 7420-00212)

5 magnets are included to be used with the inductive sensor.

- 1.000 mm. cord length
- Range: 10 – 5.000 Hz
- Material: Neodymium (NdFeB)
- 9.5 mm. diameter
- 1.6 mm. thickness

INDUSTRIES

- Construction
- Mining
- Textile
- Laundry
- Stationary Machinery & Tools
- Pulp & Paper
- Packaging & Automation

APPLICATIONS

- Heavy Duty Equipment
- Fans + Pumps
- Conveyor Systems
- Industrial Machines
- Compressors
- Centrifuges
- Bottling Machines
- HVAC
- Truck & Bus
- Steel Mill (Cold/Hot)
- Dough Mixer



Sonic 550C sensor compatibility

All sensorheads are compatible and can be mounted on the following Sonic Tension meter models:

- Sonic 505C
- Sonic 507C
- Sonic 508C
- Sonic 550C

IMPORTANT NOTE! GATES SONIC TENSION METER SHOULD NOT BE USED IN EXPLOSIVE RISK AREAS.