

FEATURES OF U-508

New The 500 latest results are retained for record keeping.

New Exporting the results to PC is possible. (Note: Operate only Japanese Microsoft Windows Vista/7/8)

New Judgment functions of the result. Utilizing the equipped application U-508 for PC, before hand, you can set up both upper and lower limit; therefore you can easily find out the result.



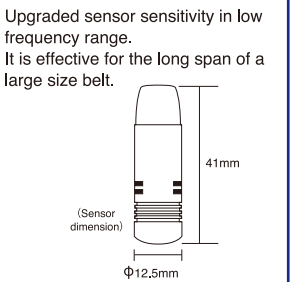
Basic Function

Preinstalled belt unit mass is expanded **High quality sensor**

Can display the unit mass by selecting the belt type. Former type U-507: 46 kinds → U-508: 69 kinds

S No 01	1.5GT	0.9
1	2GT	1.3
2	3GT	2.5
3		

52 kinds of tooth belt and 17 kinds of V belt data are already installed.



Wider measurable frequency area

The number of switching range: U-507 3 steps → U-508 2 steps
Capable of measuring up to 5000Hz.

Data selecting function options are enriched.

Doubled the amount of available numbers to memorize the input data.

Former type U-507: 20 kinds → U-508: 40 kinds

Equipped graphic LCD

The graphic LCD is capable of displaying enormous volume of information.

Display measured tension value and frequency value

S No 01	RESULT	TEN	28.1	N
		FRQ	249	Hz

Capable of confirming tension and frequency value at once.

Traceability system

Inspection result of ISO9000, traceability certification and calibrator are available.

Other functions

- Automatic cancellation of background noise by automatic gain adjustment
- Automatic trigger off function
- Automatic power off
- Graphic LED with backlight

Backlight equipped

Convenient to use in dark area by LCD backlight

Display Measured and standard tension (rough indication)

S No 01	3GT	RESULT	RES	31.5	N
			CAT	29.0	N

Capable of comparing measured and standard tension value. (Tooth belt only)

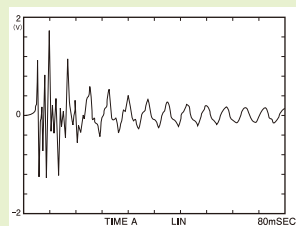
Display mass, width and span

S No 01	RESULT	M	999.9	g/m
		W	999.9	mm/R
		S	9999	mm

Input data is viewable.

Measurement principle of U-508

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



Measurement Step

- Gain adjustment (Automatic canceling of background noise)**
This unit measures the surrounding noise environment periodically after power-on until pressing of "MEASURE" button, and automatically adjusts the sensitivity of sensor. Press "MEASURE" button of fixing the sensitivity of sensor.
- Detection of vibration waveform**
The sensor detects sonic wave which was generated by flipping the static belt with a finger.
- Removal of noise component**
Self-contained filter automatically removes noise component.
- Measurement of cycle**
Cycle measurement circuit measures every cycle of input waveform.
- Signal processing**
Measures basic waveform by oscillation pattern which differs from condition to condition by data processing established in simulation.
- Frequency conversion process**
Converts continuous stable waveform into frequency.
- Tension calculation process**
The unit converts belt tension when unit weight, width, and span length of corresponding belt are input with numeric key.

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

T_o : Tension
M : Unit mass (g/mm width × m length)
W : Belt width or number of ribs (wires) (mm/R)
S : Measured span length (mm)
f : Horizontal characteristic frequency (Hz)

Calculation example

[1] Tooth belt [8YU × 20mm, Span length 250mm]
• Input value: M=5.2 (g/mm width × m length)
W=20 (mm width), S=250 (mm span length)
• About Tension (N) and frequency (Hz)
2.6N/10Hz~9,360N/600Hz

[2] V rib belt [MicroV / PK section×5rib, Span length 250mm]
• Input value: M=21.0 (g/mm width × m length)
W=5.0 (Number of Ribs), S=250 (mm span length)
• About Tension (N) and frequency (Hz)
2.63N/10Hz~9,450N/600Hz

[3] Steel wire [φ0.6mm Steel wire, Span length 50mm]
• Input value: M=1.3 (g/mm width × m length)
W=1.0 (Put 1 for each), S=50 (mm span length)
• About Tension (N) and frequency (Hz)
0N/10Hz~325N/5,000Hz

Sonic Belt Tension Meter U-508

Model name	U-508
Model number	TM-508
Measurable range	10Hz~5,000Hz
Battery	Alkaline battery (Triple A type × 2 pieces)
Mass	120g
RoHS	Certified
Accessories	Flexible type sensor (TM-AMM) Soft case for carrying Two triple A batteries USB cable is not attached.