

Advanced Type Vertical Motorized Test Stand EMX-500N/1000N

- High end model achieving greater precision as well as high usability
- Wide speed range, 0.5 to 600mm/min, allowing various test conditions
- Able to press and pull sample at desired distance from contact point (Length limit/CONTACT DETECTION)

Improving precision of measurement with EMX series



EMX-500N

EMX-1000N

EMX feature rugged design and smooth motion, achieving precise measurement. With minimized influence of deformation, it is not only suitable for force measurement, but also a perfect solution for force-displacement measurement. Combine it with a force gauge and dedicated software, to draw graphs of force vs time or force vs. displacement at high sampling rate (2000Hz).

It equips useful functions to handle a variety of testing, such as wide speed range (0.5 to 600mm/min), setting of digital travel distance by 0.1mm, CONTACT DETECTION, repeating number of testing, pausing time, and operation pattern storing functions. Furthermore, the equipped I/O connector allows communications with various external devices, which can be used to improve efficiency or safety in testing by using inputs such as start and interlock.


Features

<p>Highest Repeatability</p> <ul style="list-style-type: none"> - Applies constant testing speed and direction - Most rugged design minimizing influence of deformation (max. 0.25mm) - Smooth motion by ball screw mechanism - Digital setting of travel distance by 0.1mm 	<p>Easy Operation</p> <ul style="list-style-type: none"> - Easy set-up mode - Ergonomically inclined control panel - Dial operation for digital setting - 4 testing modes to meet testing requirements
<p>Versatility for a wide variety of testing</p> <ul style="list-style-type: none"> - Wide speed range from 0.5 to 600 mm/min - Ideal for durability test by setting the number of test cycles - Timer function for compression testing allows pausing at a set force value (*1) - Designed for mounting a wide range of grips and fixtures - External signal input is equipped 	<p>Functions improving test efficiency</p> <ul style="list-style-type: none"> - Automatically detects contact point (*1) - Up to 5 testing patterns can be stored or copied - Automatically changes traveling and measuring speed at a set force value (*1) - Starts software together with test stand motion (*1) - Stops or Returns force gauge when it senses that test sample is broken (*1*2)

*1 Requires certain models of force gauge and optional cable.

*2 This function is not able to be used together with CONTACT DETECTION.

[Application Example and Configurations]



[Optional Cable]
Connects force gauge and test stand to activate a variety of control functions.

[Force Gauge]
Measures compression, tensile, peel strength, etc. Mountable to test stand with screws.

[Optional Attachments]
Integral components to complete a testing system, selectable from a wide range to suit your testing applications.

[Stroke Limit]
[Speed Shift Point]
Set limits of stroke easily with upper and lower knobs. Middle knob adjusts the speed shift point.

[Head]
Operates upward and downward with mounted force gauge.

[Table]
Attachments or testing samples can be mounted on the table.
Dimension: W200 x D100 mm

[Operation Panel]
Used for settings, operations and emergency stop.

*Force gauge, optional attachments and optional cable are sold separately.

[Operation Panel]






[Emergency Button]
For emergency stops

[Push Dial]
For setting by turning and pressing. Jog move at manual mode.


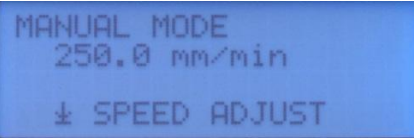
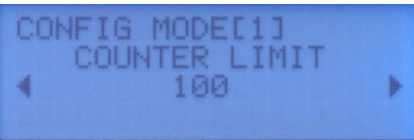


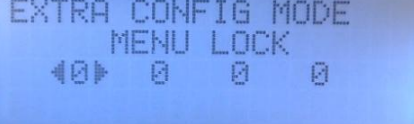
[LCD]
Shows status and settings

[Operation Buttons]
Controls upward and downward at set/max. speed and stop.



[Applications] Use suitable attachments to perform a variety of measurements.

Tactile test of switches	Material bend testing	Repulsion test of cushion material
Evaluates tactility of a variety of switches and buttons such as a switch of camera shutter.	Applies compression force to test strength of materials such as metal by bending or breaking.	Analyzes cushioning characteristics of materials including sponges and packaging buffers.
		

[Basic Operations]

<p>Adjusting speed</p>		<p>Testing speed is easily adjustable with dial.</p> <p>Setting resolution: [0.5-20mm/min: 0.5mm/min] [20-100mm/min: 5mm/min] [100-600mm/min: 10mm/min]</p> <p>Adjustable speed types: Start, Measuring, Return</p>
<p>Three measuring modes</p>		<p>Three testing modes are available to meet requirements.</p> <ul style="list-style-type: none"> - Manual mode: Moves while up/down buttons are pressed - JOG mode: Minute feeding by turning dial (approx. 0.01mm per 1 turn) - Cycle mode: Travels between stroke limit knobs for cycles (Available from ONE WAY STOP, AUTO RETURN, REPEAT CYCLE and KEEP LOAD)
<p>Other functions</p>		<p>Timer and Counter: Allows to set the number of tests to repeat and pausing time</p> <p>Counter (number of tests to repeat): Max. 65535 times Timer (pausing time): Up to 99 min 59 sec 9 (by 0.1 sec)</p>
		<p>Digital length limit: Moving distance set by digital setting</p> <p>Digital displacement limit: by 0.1mm</p>
		<p>Storing operating patterns: Up to 5 patterns of testing speed, counter, timer, and digital displacement limit stored as operating conditions</p> <p>Copy and edit the set conditions improving workability of editing the conditions</p>
		<p>Menu lock: Set a password to prevent accidental changes of measurement conditions</p>

[Main Options]

<p>Long stroke (-L)</p>	<p>-FA option (-FA)</p>
<p>This option provides extended stroke. Useful when testing stretching samples or testing for long distance.</p>	<p>This option allows a linear scale unit to be installed on the test stand column for measuring head displacement.</p> <p>*A compatible force gauge with displacement I/O, such as the ZTA series, and an optional cable are required.</p>
	

[Specifications]

Model	EMX-500N	EMX-1000N
Capacity	500N	1000N
Speed (*1)	Digital 0.5 to 600mm/min [0.5 - 20mm/min: by 0.5mm/min] [20 - 100mm/min: by 5mm/min] [100 - 600mm/min: by 10mm/min]	
Max. Sample Height	280mm (*2)	310mm (*2)
Rigidity	[Standard models] less than 0.25mm [Long stroke (optional)] less than 0.6mm	
Stroke Limit	Controllable with upper and lower knob / Digital length limit (travel distance)	
Measuring Modes	Manual / Jog / Cycle mode	
Functions	Counter (number of tests to repeat): Max. 65535 times Timer (pausing time): Up to 99 min 59 sec 9 (by 0.1 sec) Length limit (travel distance): by 0.1mm (*3) Storing operating patterns: up to 5 patterns / Copy (operating condition duplication) CONTACT DETECTION (*4*5), BREAK DETECTION (*4*5) Easy Setup (simple operating mode selection) / Menu lock (menu protection lock)	
Control	Emergency stop, force control (*6), overload stop (*6, *7), external signal input	
Operating temperature humidity	0 to +40 degree Celsius RH 85% or less (without condensation)	
Voltage	AC100 to 240V, 50/60Hz (Select from 100, 120 and 230V. Accessories are provided accordingly.)	
Power Consumption	50W	
Dimensions	See [Dimensions]	
Weight	Approx. 19kg	Approx. 24kg
Accessories	Operating manual, power cable, spare fuse, tools, GF-1 (Grip mounting adaptor) Anti-tip fixture (only for -L option)	Operating manual, power cable, spare fuse, tools, GF-2 (Grip mounting adaptor) Anti-tip fixture (only for -L option)
Available Options (*8)	-L: Extended stroke by 300mm / -FA: Inbuilt liner scale	

*1 When applying force to highly elastic samples such as springs, the speed may decrease by a few percent.

*2 This value is the distance between the test stand table and the tip of force gauge measuring shaft when the head is in the uppermost position. (When up to 1000N model of ZTS/ZTA series is mounted.) The maximum sample height of EMX-1000N varies depending on the mounting position and direction of the force gauge mounting plate. Refer to [Dimensions] for details.

*3 Due to the mechanical characteristics of this product, a cumulative error may occur between the set displacement and the actual displacement. These errors may vary depending on operating conditions (e.g., applied force, test speed, and temperature changes). Adjust test parameters as required.

*4 Connection to a compatible force gauge (ZTA/eZT/FA Plus2/eFA Plus2 series) with a dedicated cable is required.

*5 CONTACT DETECTION and BREAK DETECTION are not able to be used together.

*6 Connection to a compatible force gauge (ZTS/ZTA/eZT/FA Plus2/eFA Plus2 series) with a dedicated cable is required.

*7 It does not guarantee complete prevention of failures due to overloads.

*8 Add the option code after the model name to complete the model with options.
e.g., When adding long stroke option to EMX-1000N ... Model: EMX-1000N-L

[Mountable Force Gauges]

	EMX-500N	EMX-1000N
DST/DSV-2N to 1000N	✓	✓
ZTS/ZTA-2N to 1000N	✓	✓
ZTS/ZTA-2500N to 5000N	N/A	✓
DPU-2N to 500N	✓	✓
DPUH-1000N to 5000N	N/A	✓ *1
FB/FS/PS/PSS/PSM series	✓	✓
PSH series	N/A	✓

* Load cells not listed cannot be mounted on any of our test stands.

* Ensure to use within the capacity of force gauge and test stand regardless of the mountable models.

*1 Mounting block (sold separately) is required to mount DPUH series (1000N to 5000N) to EMX-1000N.

[User Mounted Unit]

FA version: OP-EMX-FA(-L)

It builds a linear scale into a test stand to output travel distance of a force gauge and allows to utilize it for analysis of force-displacement relations.

- * Requires to mount the unit to EMX series (firmware ver. 2.0 or later) by yourself. Cable CB-718 (sold separately) is required.
- * This option is available only for firmware Ver.2.0 or later. If your test stand's firmware is earlier than ver.2.0, it has to be shipped to our factory to activate this option. Additionally, Cable CB-728 (sold separately) is required. Contact us for more details.
- * Amplifier such as ZTA and FA Plus2 (sold separately) or software are required to record measuring value of linear scale.
- * Select -FA option if the test stand with built in linear scale is required.

[Force gauge Interlinking function] Applicable with the dedicated force gauge and cable connections.

- **Overload stop**: Automatically stops the operation when an overload signal is received from the force gauge. (This function does not guarantee complete prevention of failures due to overloads.)
- **Force control**: Controls test stand operation with the force gauge according to the force value.
- **Measuring speed setting**: Enables automatic speed change at a point of contact using the set force value
- **Automatic measurement**: Software recording and zeroing force gauge can be automatically done
- **CONTACT DETECTION**: Automatically detects the contact point of a sample (*1)
- **BREAK DETECTION** : Automatically detects the break of a sample and stops/returns force gauge (*1)



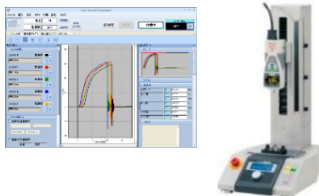

* Compatible force gauge: ZTS/ZTA/eZT/FA Plus2/eFA Plus2 series.

*1 This function is activated only when used with ZTA/eZT/FA Plus2/eFA Plus2 series force gauge.

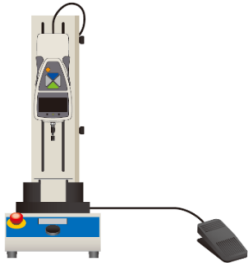


[Dedicated Cables]

CB-528	For connecting the Force Gauge to the Test Stand to enable Force gauge Interlinking functions
CB-718	For -FA option: Connects the dedicated Force Gauge to the Test Stand and the Linear Scale for force-displacement measurement. (Force gauge Interlinking functions are also enabled.)
CB-706	For -CN option: Open-Ended Cable to connect with external device

[Related Products]

Digital Force Gauge ZTS/ZTA series	Interlocking shield option for motorized test stand OP-MX2EMX-IC
Digital force gauge capable of measuring at a sampling rate of 2000 Hz. Connection with MX2 series by the dedicated cable enables interlinking functions.	This shield prevents debris of test sample from scattering, and stops operation when the door is open for more safety.
	
Force-Displacement Measurement Unit FSA series	Advanced Type Vertical Motorized Test Stand EMX2-500N
Measurement unit for force-displacement measurement. By creating a force-displacement graph, it can be used for tactile tests, material evaluation, and more.	Updated Advanced Type Test Stand from the EMX-500N. Downloadable software for configuring test conditions in Auto Test Mode is included, resulting in improved usability.
	

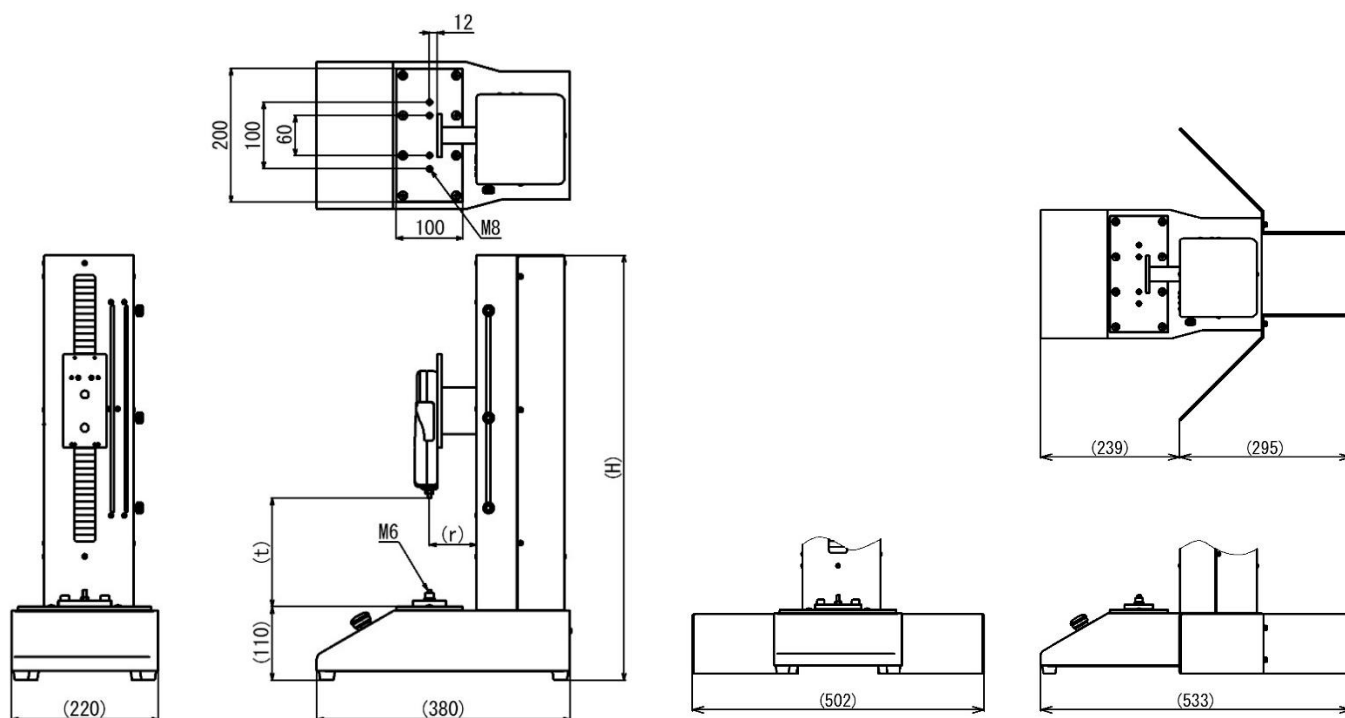
[Examples of Customized Solutions]

External signal input	Testing Large Samples	Controller-separated Model
Mount a switch such as a foot pedal to start and stop operation, which improves efficiency or allows operating it together with your equipment.	For testing a sample larger than the standard test stand table or testing multiple points on a large sample to push in/pull.	To incorporate a force measuring system into your equipment or to operate the stand remotely to avoid accidents.
		

[Dimensions]

EMX-500N(-L)

(EMX-500N-L with Anti-tip fixture)



* Anti-tip fixture is included in only EMX-500N-L and EMX-1000N-L.

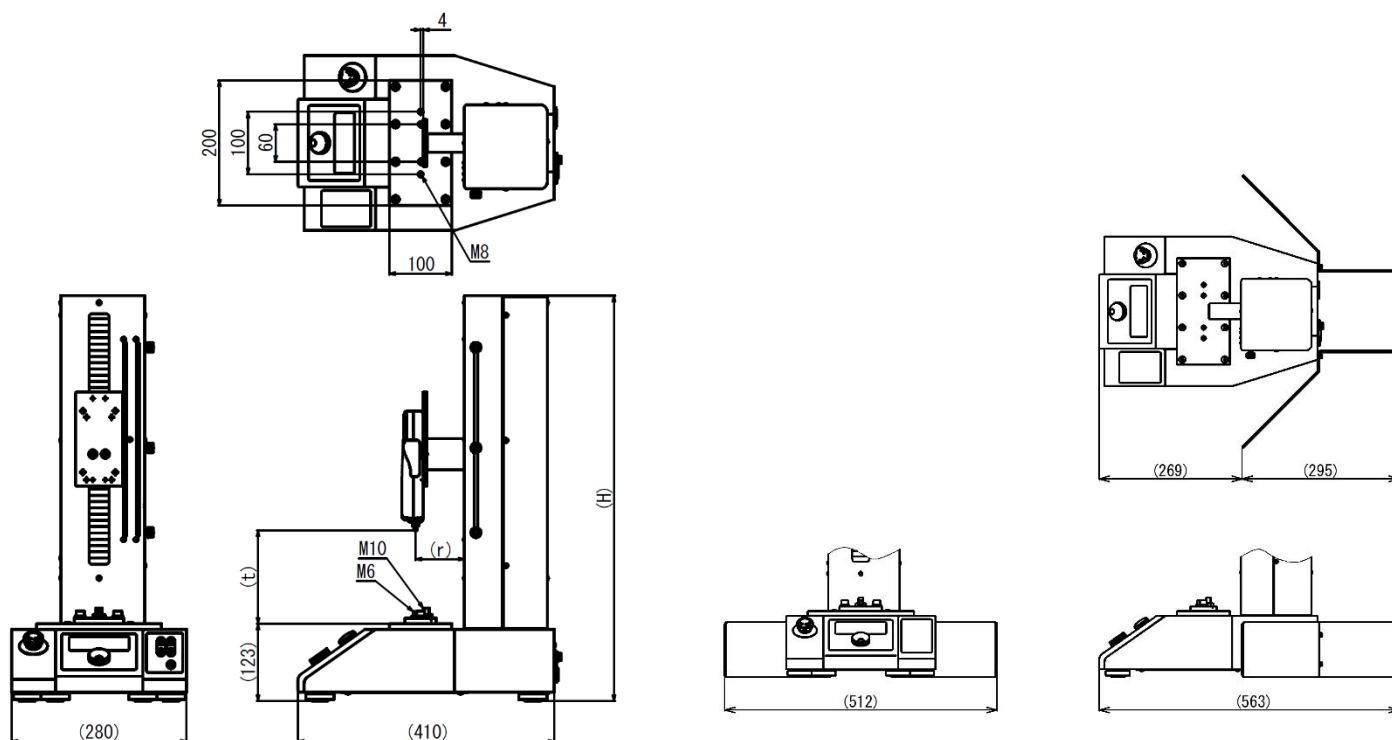
		EMX-500N	EMX-500N-L (*1)
H		637	937
r	DST/DSV/ZTS/ZTA (2N to 1000N) mounted	70	
	DPU (up to 500N) mounted	68	
t	ZTS/ZTA (2N to 1000N) mounted	32 to 280	32 to 580
	DST/DSV mounted	40 to 290	40 to 590
	DPU (2N to 10N) mounted	54 to 305	54 to 605
	DPU (20N to 500N) mounted	48 to 295	48 to 595

Unit: mm

* "M6" on the front view and the side view are for attachment installation and "M8" on the top view indicates the position of holes for the screw to fix the grip mounting adaptor to the stand.

EMX-1000N(-L)

(EMX-1000N-L with Anti-tip fixture)



* Anti-tip fixture is included in only EMX-500N-L and EMX-1000N-L.

		EMX-1000N		EMX-1000N-L	
H		648		948	
r	DST/DSV/ZTS/ZTA (2N to 1000N) mounted			78	
	ZTS/ZTA (2500N to 5000N) mounted			91	
	DPU (up to 500N) mounted			76	
	DPUH (1000N to 5000N) mounted (*1)			80	
t	Force gauge/Load cell mounting position (*2)	Lowest	Highest	Lowest	Highest
	ZTS/ZTA (2N to 1000N) mounted	11 to 262	59 to 310	11 to 562	59 to 610
	ZTS/ZTA (2500N to 5000N) mounted	61 to 307	109 to 355	61 to 607	109 to 655
	DST/DSV mounted	21 to 267	69 to 315	21 to 567	69 to 615
	DPU (2N to 10N) mounted	95 to 340	125 to 370	95 to 640	125 to 670
	DPU (20N to 500N) mounted	88 to 335	118 to 365	88 to 635	118 to 665
	DPUH (1000N to 5000N) mounted (*1)	10 to 260	40 to 290	10 to 560	40 to 590

Unit: mm

* "M6" or "M10 (for 1000N or higher models)" on the front view and the side view are for attachment installation and "M8" on the top view indicates the position of holes for the screw to fix the grip mounting adaptor to the stand.

*1 Mounting block (optional) is required when mounting DPUH-1000N to 5000N.

*2 Dimensions at the lowest position and highest position, including changes to the mounting direction of the force gauge mounting plate in addition to the screw holes on the head used.

[Cautions]

- The contents may be changed without prior notice.
- Force gauge is not included but necessary to conduct force measurement.
- This product does not include a force gauge, optional attachments or optional cable.
- This product is designed for measurement purpose only.
- Do not copy the contents without permission.

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