



# MM-601B

## Force Gauge

MM-601B is a portable electronic force gauge designed to be carried around a production site to set and verify force for resistance spot welders.

### KEY FEATURES

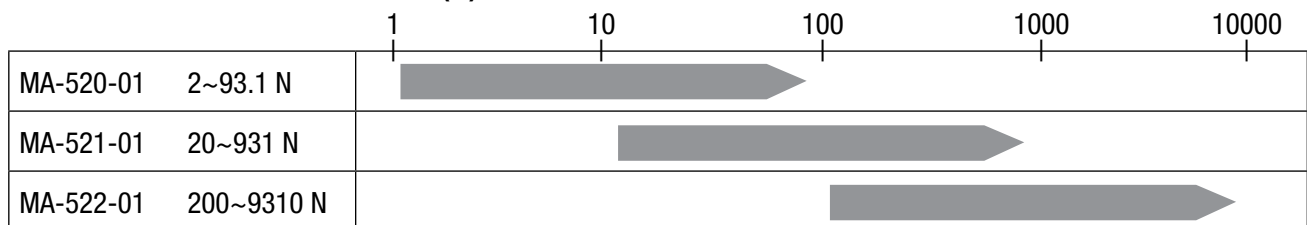
- Simple and accurate handheld force measurement
- HOLD and ZERO functions
- One touch tare setting (ZERO)
- Dual power source: rechargeable internal batteries or external adaptor
- External I/O for analog output and measurement hold
- Easy-view LCD
- Analog force output

### FORCE SENSORS



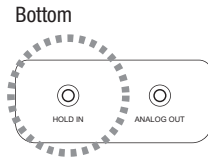
MA-521-01 / MA-522-01

### WELD FORCE MEASURING RANGE (N)



**EXTERNAL CONTROL FOR MEASUREMENT HOLD**

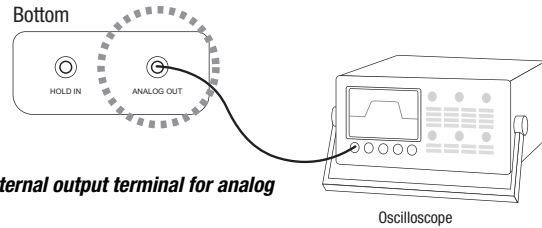
HOLD maintains the measurement of the peak value on the display. When connected to a weld head with an external cable, the HOLD can be activated by the weld head's internal micro switch upon reaching peak force.



External input terminal for measurement HOLD

**ANALOG OUTPUT**

Weld force can be measured with an external device; such as an oscilloscope. It shows the timing when weld force becomes stable, aiding initial squeeze time set-up.



External output terminal for analog

Oscilloscope

**TECHNICAL SPECIFICATIONS**

<b>Model</b>	MM-601B
<b>Measuring range</b>	0.20~9.50 kgf / 0.20~9.31 daN (0.45-20.9 lbf) (MA-520) 2.00~95.0 kgf / 2.00~93.1 daN (4.5-209 lbf) (MA-521) 20.0~950 kgf / 20~931 daN (45-2093 lbf) (MA-522)
<b>Measuring accuracy</b>	+/- 5% of full scale
<b>Display</b>	Decimal point & unit: automatically set depending on measurement range (kg / daN selectable) Overload: Displays "OVER!!" with intermittent buzzer Low battery alert: "BATTERY" flashes seven times before automatically turning the power off
<b>Auto-power OFF</b>	Power off after seven minutes idle time When not connected with a sensor, automatically powers off after three minutes
<b>External control of measurement HOLD</b>	HOLD value measured by externally applied contact closure signal
<b>Analog output</b>	Output impedance 5 k $\Omega$ min
<b>Operating temperature</b>	0 to 40° C
<b>Power</b>	NiMH battery 1.2 V x 4 pc. (4.8 V)
<b>Accessories</b>	AC adapter (battery charger), leather case, carrying case, external HOLD input cable, noise filter

**WEIGHT & DIMENSIONS**

<b>Dimensions (L x W x H)</b>	1.18 in x 2.91 in x 6.46 in (30 mm x 74 mm x 164 mm)
<b>Weight</b>	1.1 lb (0.5 kg)

**TECHNICAL SPECIFICATIONS OF FORCE SENSOR**

Model	MA-520	MA-521	MA-522
<b>Measuring range</b>	0.20~9.31 daN (0.45-20.9 lbf)	2.00~93.1 daN (4.5-209 lbf)	20~931 daN (45-2093 lbf)
<b>SWL (Software Limit)</b>	9.31 daN	93.1 daN	931 daN
<b>AL (Absolute Limit)</b>	1.5 times of SWL		
<b>Measurement accuracy</b>	+/- 3% of SWL		
<b>Weight</b>	200 g (0.44 lb)		250 g (0.571 lb)

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