

- **Automatically operated micropositioners for precise tension control**
- **Chamber can be easily divided to keep 2 mounted samples separate**
- **Glass windows in chamber base facilitates morphological or fluorescence measurements**
- **Automated normalization procedure to calculate and set the preload tension**

The Auto Dual Wire Myograph System - 520A is designed for simultaneous testing of two vessels with diameters of 30  $\mu\text{m}$  - 3 mm, independently. The vessels are mounted as ring preparations by threading them over two parallel wires and securing the wires to two supports or "jaws". One support is attached to a linear motor-driven micrometer, allowing automated control of vessel circumference and stretch. The other support is attached to a force transducer for measurements of force/tension development. The base of the chamber contains glass windows allowing morphological observations or fluorescence measurements on an inverted microscope. Typically, the preparation is kept in the heated vessel chamber in a physiological salt solution at 37 °C bubbled with oxygen where the vessels remain viable for at least 12 hours.

The preparation is mounted in a heated 10 ml acid-resistant stainless steel chamber, which can be covered with a lid with ports for rapid suction/draining, refilling and bubbling of oxygen. Following mounting and equilibration, the passive length-tension relationship of the vessel is determined. During the actual experiment, the circumference of the vessel is kept constant. Compounds can be added directly to the chamber, and the vessel's contractility and reactivity are measured under isometric conditions.

Determination of the passive length-tension relationship for the mounted vessel is fully automated. Using the automated micropositioner a normalization procedure is performed and preload calculated and set.

In the Auto Dual Wire Myograph System, the chamber can be divided for independent testing of each vessel. The two vessels also can be mounted in a single chamber by removing the divider. This allows direct comparative studies of vessels from treated/untreated conditions or diseased vs. healthy patient samples, for example, by exposing the vessels to identical concentrations of drug or compound. It is thus possible to examine whether a given pathological state is associated with altered morphology or reactivity.

As an option, an electronic valve can be added to the system for easy control and emptying of the chamber.

The Wire Interface with touch screen makes it easy to set up and use. Furthermore, the Wire Interface is compatible with the DMT Device Enabler allowing automatic recognition of supported devices by LabChart, use of multiple devices simultaneously, correct units and ranges in LabChart channels and simultaneous recording of data into LabChart alongside a PowerLab. The DMT Device Enabler allows the Auto Dual Wire Myograph System - 520A to stream data directly into LabChart without a PowerLab unit.



## Features

### Wire Interface

- Power supply

### Auto Dual Wire Myograph - 520A

- Wire Myograph connection cable with a temperature probe
- Two sets of stainless steel mounting jaws with supports
- Chamber cover

### Accessories:

- 1 x calibration kit (including bridge, T-balance and 2 gram weight)
- 1 x spool of 40 µm stainless steel wire
- 1 x tube of high vacuum grease
- 1 x tube of grease for linear slides
- 5 x spare screws for mounting of jaws
- 1 x bath divider
- 2 x Allen keys
- 1 x small screwdriver
- 2 x 40 mm funnel

## Optional accessories

- Data Acquisition System - PowerLab
- Data Acquisition and Analysis Software - LabChart
- Stimulator
- pH meter
- Vacuum pump
- Electronic vacuum valve
- Waste bottle
- Gas supply manifold

## Technical specifications

### Wire Interface

<b>Voltage:</b>	External 100-240 VAC to 24 VDC adapter ± 10%
<b>Current max.:</b>	3.3 Amps at 24 VDC
<b>Dimensions:</b>	34 x 25 x 15 cm (LxWxH)
<b>Net weight:</b>	5 kg
<b>Operating temp.:</b>	15-40 °C
<b>USB connector:</b>	For download of firmware and connection to PC Software
<b>4 Analog outputs:</b>	BNC connector at the back, used to connect to external acquisition system
<b>Analog output range:</b>	± 2.5 V
<b>Analog output impedance:</b>	<200 Ohm
<b>Force resolution:</b>	On display 0.1 mN resolution on analog BNC connector is higher than 0.01 mN
<b>One pH input:</b>	Range pH 0-14
<b>pH calibration:</b>	Manual with guidance on display

### Auto Dual Wire Myograph - 520A

<b>Vessel size:</b>	>30 µm
<b>Vessel alignment:</b>	Manually in the X, Y and Z plane
<b>Micrometer positioner:</b>	Motorised
<b>Mounting supports:</b>	Jaws
<b>Chamber:</b>	Dual, independent or dependent
<b>Chamber size:</b>	Standard max. 20 ml (10 ml typical)
<b>Chamber cover:</b>	With connections for suction and gassing
<b>Chamber material:</b>	Acid resistant stainless steel
<b>Chamber temp. range:</b>	From ambient temp. to +50 °C
<b>Chamber heating:</b>	Built-in
<b>Chamber temp. Resolution:</b>	0.1 °C
<b>Chamber temp. Stability:</b>	± 0.2 °C (when target temperature attained)
<b>Temperature probe:</b>	External PT1000
<b>Force range:</b>	± 200 mN
<b>Force calibration:</b>	Manual with guidance on display
<b>Data on the transducer</b>	
<b>Max. Range:</b>	± 200 mN
<b>Operating temperature:</b>	15-50 °C
<b>Frequency range:</b>	0-20 Hz

### Optional accessories

<b>pH meter</b>	
<b>- range:</b>	pH 0-14
<b>- temp. correction:</b>	0-50 °C
<b>Electronic valve:</b>	100-240 VAC (auto) 50/60 Hz via external power supply

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