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VENTILATORS and GAS ANESTHESIA

## Bronchospasm Transducer

*New model for digital recorders*

Cat. No. 17020

### General

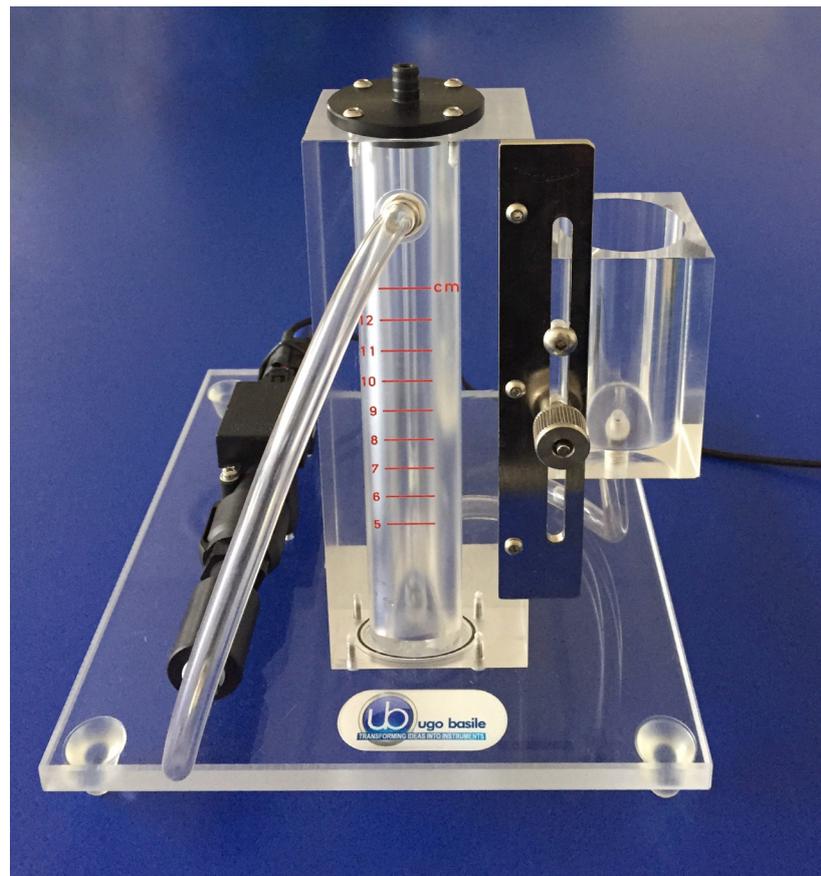
This transducer is designed to perform the bronchospasm test on laboratory animals and is particularly suitable for connection to UGO BASILE DataCapsule-Evo Recorder, and to other digital data acquisition systems.

It enables the research worker to evaluate the spasm-inducing effect of drugs having a very wide range of action, not necessarily intended to act on respiratory dynamics.

The Bronchospasm Transducer 17020 is also a useful research tool for screening substances inducing the opposite effect, both those causing active bronchodilation in basal conditions and those which antagonize test drugs such as histamine, bradykinin, etc.

It is basically an air flow meter provided with a water input valve with adjustable pressure threshold.

The measuring device is a compact unit made entirely of Perspex; power supply and controls are located in a separate electronic box.



- Evaluates the bronchospasm inducing effect of drugs
- The new model records the volume (with a precision of 0.1 ml)

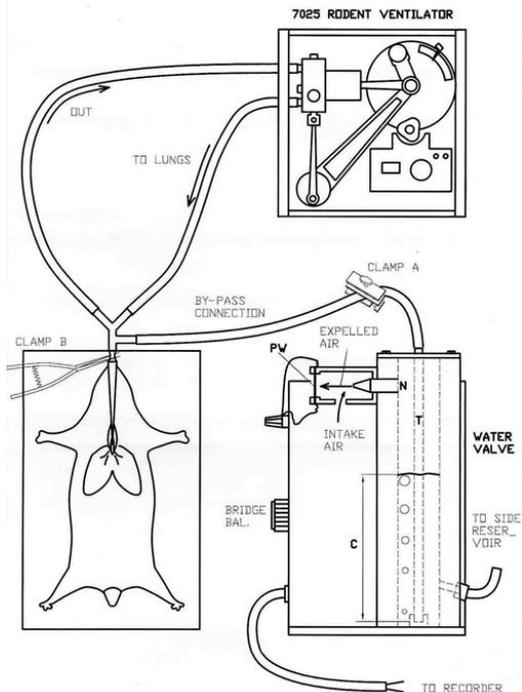
### Main Features

- Simple and reliable method to assess airflow resistance
- The effect of bronchodilators agents is quickly assessed
- A complete set-up includes optional animal ventilator and data acquisition system (or chart recorder). Ask for details!

**Ugo Basile: more than 25,000 citations**

### Experimental Layout

The experimental layout follows the well-known Konzett-Roessler arrangement (see BIBLIOGRAPHY) with the anaesthetized subject breathing via a reciprocating pump, according to Starling's mode of operation. See sketch below:



### Sensitivity

The sensitivity of the instrument in comparison with conventional Konzett-Roessler apparatus is illustrated in the table below:

Minimum dosage in µg/Kg giving significant readings

	K-R Apparatus	UGO BASILE 17020
Histamine	3 - 6	0.3 - 0.6
Acetylcholine	20 - 40	3 - 10
Serotonin	6 - 15	1 - 3

### Air Flow Meter

The recording system monitors respiratory dynamics by providing a tracing appearing as a succession of spikes. When bronchospasm occurs, overpressure displaces the water column inside the T-tube and air bubbles through the water, escaping through an air flow transducer thus generating an electrical signal.

When Bronchodilators are administered, overpressure is reduced to below normal breathing values, as the bronchi exert less aerodynamic resistance to forced inspiration.

The tracing will decrease in amplitude to a marked degree, enabling the action of bronchodilators to be assessed.

Compared to the previous model, which simply recorded the number of events, the new model also provides the volume, with a precision of 0.1ml.

### Controls

The power supply and the controls are located in a separate cabinet of original design.



### Ordering Information

- 17020 Bronchospasm Transducer, complete with following parts:
- 17020-302 Instruction Manual (on CD)

#### Ask for details about:

- 7025 Rodent Ventilator
- 17308 DataCapsule-Evo Digital Recorder

### Physical

- Weight 2.7Kg
- Shipping Weight 5.2Kg
- Packing 40x39x30cm

### Bibliography

#### Method Paper

- H.Konzett & R. Roessler: Arch. Exp. Path. Pharmacol.: 195, 171, 1940

#### Papers which include mention UB Models

- K. Ogino et alia: "PM2.5-Induced Airway Inflammation And Hyperresponsiveness In Nc/Nga Mice" *Environmental Toxicol.* 10.1002/tox.22303, June 2016
- I. Murakami et alia: "Rebamipide Suppresses Mite-Induced Asthmatic Responses in NC/Nga Mice" *Am. J. Physiol., Lung Cellular and Molecular Physiology* 309(8): L872-878, 2015
- K. Ogino et alia: "Anti-inflammatory Effect of Arginase Inhibitor and Corticosteroid on Airway Allergic Reactions in a Dermatophogoides farinae-induced NC/Nga Mouse Model" *Inflammation* 36 (1): 141-151, 2013
- S.J.S. Flora et alia: "Interactive effect of arsenic and fluoride on cardio-respiratory disorders in male rats: possible role of reactive oxygen species" *BioMetals* 24 (4): 615-628, 2011
- N.R.F. Nascimento et alia: "1,8-Cineole induces relaxation in rat and guinea-pig airway smooth muscle" *J. Pharmacy and Pharmacol.* 61 (3): 361-366, 2009