

AUTOTAP

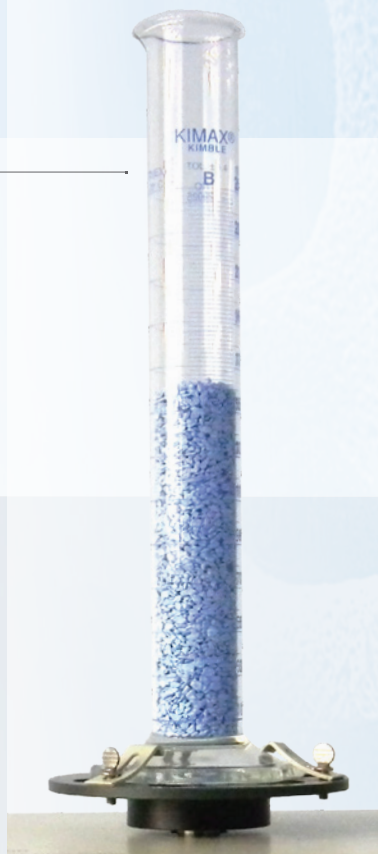
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automated tap density analyzers



AUTOTAP





TAPPED density

AUTOTAP

The apparent bulk densities of powdered, granular or flaked materials are highly dependent on the manner in which the particles are packed together due to cohesion and shape effects. Furthermore, handling or vibration of particulate material causes the smaller particles to work their way into the spaces between the larger particles. The geometric space occupied by the powder decreases and its density increases. Ultimately, no further natural particle packing takes place without the addition of pressure and maximum particle packing is achieved. Under controlled conditions of tapping rate, tap force drop and cylinder diameter, this condition of maximum packing efficiency is highly reproducible. Tap density measurement is formalized in a number of international standards to which both Autotap models conform.

Standards Suitability

- ASTM B527 (metallic powders)
- ASTM D4164 (formed catalysts)
- ASTM D4781 (fine catalysts)
- IDF 134 (dried milk)
- ISO 787-11 (pigments)
- ISO 3953 (metallic powders)
- ISO 8460 (instant coffee)
- ISO 8967 (dried milk)
- ISO 9161 (uranium dioxide powder)
- JIS K5101-12-2 (pigments)
- JIS Z 2512 (metallic powders)
- MPIF 46 (metal powders)
- USP<616>method II (preharmonization) (pharmaceutical powders)
- USP<616>method I (harmonized) (pharmaceutical powders)
- JP 3.01 Part 2 Method 1 (harmonized) (pharmaceutical powders)
- PH. EUR. 6.8 Method 1 (harmonized) (pharmaceutical powders)

To measure tap density, samples are placed in standard graduated cylinders and mounted on a universal tap platform designed to accommodate cylinders from 10mL to 500mL. After noting the initial volume and weight of the material, the number of desired taps is entered and tapping started. When the specified number of taps is completed, tapping stops automatically. Reading of the powder surface is facilitated by automatic rotation of cylinders during tapping which promotes a flat powder interface.

If the material characteristics are unknown, tapping may be done step-wise by user specified numbers of taps, while noting or graphing the results until the volume becomes constant. Once the tapping behavior is known, the proper number of taps, typically thousands, including a significant excess (to account for future variability between samples) can be preset on subsequent runs, thus freeing the operator for other work.

A noise reduction cabinet is available which can reduce the tapping noise levels by 15 dBA* or more.

*Actual improvement depends on local factors such as bench, ceiling height etc

Key Lock

The units' control panel can be disabled thanks to a lock at the front of the instrument which enables the user to prevent others from tampering with the counter settings.



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ACCESSORIES cabinet

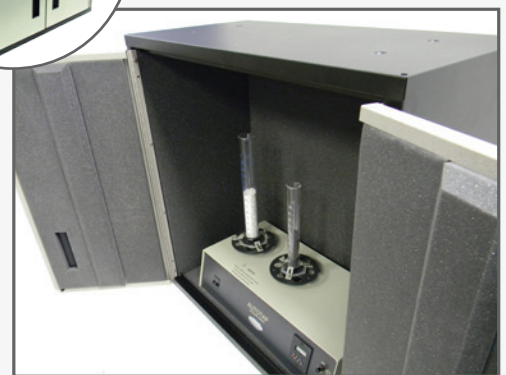
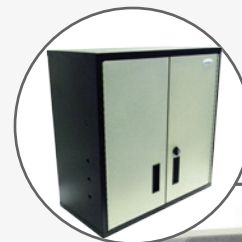
Noise Reduction Cabinet

A sound-insulated enclosure is available that accommodates either Autotap model. The noise from tapping can be reduced by up to 15 dBA (actual improvement depends on local factors such as bench material and ceiling height). The doors can be locked for added safety and security.

Dimensions:

76.2cm (30") W x 38.1cm (15") D x 76.2cm (30") H.

Weight: 28kg.

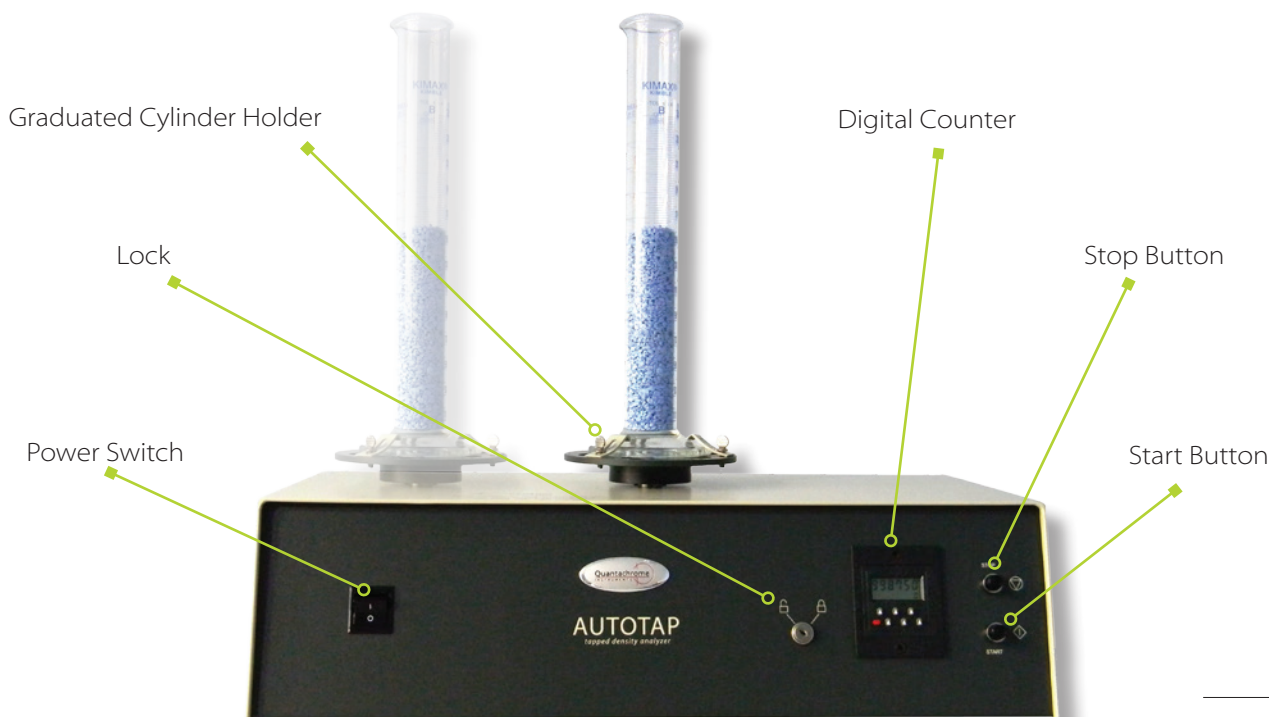


Visit www.quantachrome.com for more detailed instruments specifications and downloadable brochures.



AUTOTAP INSTRUMENT features

AUTOTAP



SPECIFICATIONS

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Performances

Stations: Autotap: 1 Dual Autotap: 2

Cylinder Sizes: 250 mL standard; 10 mL, 25 mL, 50 mL, 100 mL, 500 mL, 1000 mL optional
1000 mL requires auxillary plate (p/n 04000-1299) or quick-change assembly (p/n 01470-5830)

Nominal Tapping Rate: 260 min⁻¹

Tapping (drop) Height: 3mm (0.125 inch)

Tap Counter: 1-999999

Display: LCD, automatic countdown, automatic reset

Platform Rotation: Automatic

Sample Weight Limits: 900g (2 lb) with no effect on tapping rate
1800g (4 lb) with 5% reduction in tapping rate
2275g (5 lb) with 15% reduction in tapping rate

Controls: on/off, start, stop, counter reset

Lock-out: keyed lock for tap counter

Physical

Height: 175 mm (7 in) excluding cylinders

Width: 540 mm (21 in)

Depth: 280 mm (11 in)

Weight: 11 kg (24 lbs) Autotap

14 kg (31 lbs) Dual Autotap

Electrical

Voltage: 110-120 V or 220-240V

Frequency: 50/60 Hz

Power (max): 150 VA

Connection: Grounded, single-phase outlet

Environmental

Temperature: 15°C - 40°C

Max. Relative Humidity: 80%

Ordering Information

Autotap, 50 Hz, 100-115v: p/n 02106-50-100-1

Autotap, 50 Hz, 220-240v: p/n 02106-50-1

Autotap, 60 Hz, 100-115v: p/n 02106-60-1

Autotap, 60 Hz, 220-240v: p/n 02106-60-220-1

Dual Autotap, 50 Hz, 100-115v: p/n 02105-50-100-1

Dual Autotap, 50 Hz, 220-240v: p/n 02105-50-1

Dual Autotap, 60 Hz, 100-115v: p/n 02105-60-1

Dual Autotap, 60 Hz, 220-240v: p/n 02105-60-220-1

Noise Reduction Cabinet: p/n 62105-NRC

www.quantachrome.com

For more information regarding Quantachrome's services please contact your local sales representative or call (800) 989-2476

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- Tapped Density

Not only are Quantachrome products the instruments of choice in academia, but the technology conceived and developed by our expert staff is applied in industrial laboratories worldwide, where research and engineering of new and improved porous materials is ongoing. Manufacturers also rely on porous materials characterization technology to more precisely specify bulk materials, to control quality, and to isolate the source of production problems with greater efficiency.

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