# AutoTest 4
# Automatic Tablet Testing System

Precise measuring of weight, thickness, diameter, hardness
Reliable orientation of all tablet shapes
Robust design for demanding IPC environments
For stand-alone operation or integrated with a tablet press

pharmatron
Dr. Schleuniger®

**Swiss Quality**
High quality components paired with Swiss precision engineering provide for a long product life and minimize costly machine downtime. In order to ensure maximum reliability of your AutoTest 4, all instruments are tested according to strict internal quality standards before they leave our factory.

**Hardness Testing**
With more than 40 years of experience and more than 20'000 testers in the market, Dr. Schleuniger® Pharmatron measuring technology is a safe investment. Like all our hardness testers, the AutoTest 4 offers consistently accurate test results and fully complies with current USP (chapter 1217, tablet breaking force) and EP (2.9.8, resistance to crushing of tablets) requirements.

Quality matters.

# AutoTest 4

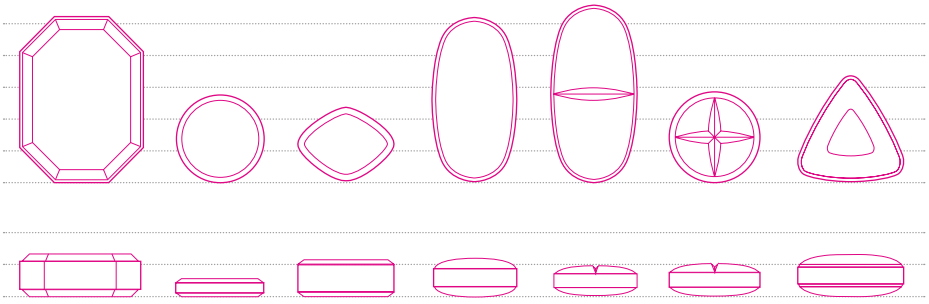
The AutoTest 4 is a modular tablet testing system that offers the highest precision and exceptional flexibility. Besides the obvious labour savings, it provides real-time, accurate test data that can be identified and evaluated immediately – resulting in increased productivity, efficiency and ease of regulatory compliance. Its outstanding quality and proven reliability have made the AutoTest 4 the preferred choice of leading pharmaceutical companies all over the world.


→ AutoTest 4
Automatic tablet testing system

# Flexibility

The AutoTest 4 is capable of testing a wider variety of tablets shapes than any other automatic tester on the market. Practically any imaginable design, including oblong, diamond, hexagon and other special shapes are automatically positioned to measure weight, thickness, diameter and hardness.

The linear movements of the patented SmartRake™ system in combination with a linear feed track guarantee reliable tablet orientation at all times. All standard round, oblong and oval tablet shapes are accurately oriented without any modifications or adaptations of the AutoTest 4. Special forms can be reliably positioned by quickly exchanging the standard rake with a custom SmartRake™. The complete change-over is easily executed within seconds and doesn't require any tools. Even cylindric shapes, capsules and test samples that tend to roll during transport can be tested as the AutoTest 4 features exchangeable chutes with and without grooves (that prevent round materials from rolling). The modular design of the AutoTest 4 also permits easy customization of your tester according to individual requirements. Choose from a wide range of standard accessories and options to tailor your machine to specific R&D, quality control or integrated IPC demands. Our experts with years of experience in testing unusual shapes and materials are looking forward to providing you with competent advice.



→ Automatic testing of virtually all tablet shapes and sizes with the AutoTest 4


→ Top view of AutoTest 4
A: Vibratory bowl feeder
B: Linear feed track
C: SmartRake™ and measuring stations

# Precision

The solid and vibration-resistant construction of the AutoTest 4 guarantees reliable test results at all times. Its unique SmartRake™ system with combined linear feed track ensures correct orientation of each test object. Precision measuring technology provides the highest accuracy.

Only the combination of quality components, state-of-the-art measuring technology and correct tablet orientation gives you test results you can rely on in everyday operation. Dr. Schleuniger® Pharmatron measuring technology complies with all current USP and EP requirements and offers consistently accurate results. Tablet hardness is measured using a precision S-beam load cell with a linearity of 99.95% over the entire measuring range. Balance problems due to vibrations known from other testing systems are virtually non-existent with the AutoTest 4. The unique mechanical integration of a high-quality weighing module makes it extremly resistant to any kind of vibration - whether the tester is positioned on a laboratory table or on the production floor next to a tablet press.

# Stand-Alone Operation

Equipped with a magazine feeder, the AutoTest 4 provides for a variety of up to 12 different products to be loaded concurrently. Testing proceeds automatically including generation of a test report after completion of each individual test. One tester can be shared by an entire team in the IPQC lab to streamline processes or among a group of press bays in production.

As the AutoTest 4 is capable of testing a great variety of tablet shapes and sizes without requiring any modifications, it is ideally suited for the automatic execution of a whole series of tests. After each test, a test report with statistical analysis and individual measurement results is printed automatically. Individual alarm functions can be used to alert laboratory personnel or the press operator in case of limit violations or if a test has failed. Connection of an optional status light or custom devices for audible alarms is also possible. All options, including the modular 12-magazine feeder, can also be retrofitted to existing machines anytime.

→ AutoTest 4 equipped with 12-magazine feeder

# Automatic In-Process Control (IPC)

From full online testing capability with different brands of tablet presses for automatic self-adjustment to mechanical integration with older tablet presses – the AutoTest 4 is the ideal choice for highly efficient in-process control. Its robust design makes it perfectly suited for demanding production environments.

Automated in-process control inside the compression room exposes instruments to the challenges of daily tablet manufacturing. The rugged construction of the AutoTest 4 virtually eliminates problems typically associated with other tablet testing systems due to press room environments. Equipped with integrated wheels or placed on a special transport trolley, the AutoTest 4 can be conveniently moved to another location on the production floor during change-over operations and cleaning of the compression machine. In order to further optimize your in-process quality control, additional options such as automatically collecting samples during production runs or quickly performing stand-alone tests during setup of the tablet press are readily available

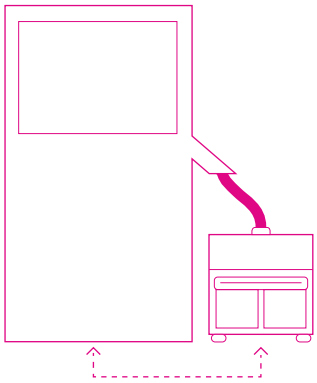
→ AutoTest 4 with integrated wheels to easily move the tester on the production floor

## Online IPC with tablet press

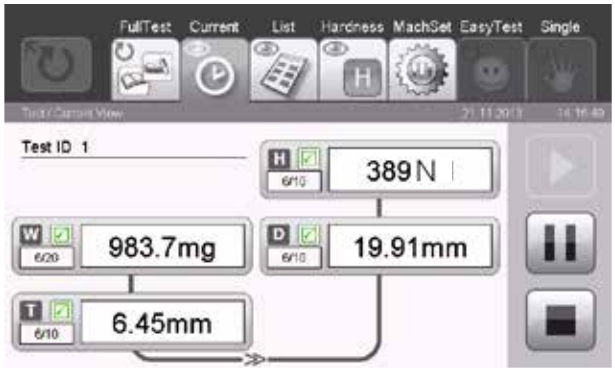
To take full advantage of modern high-capacity tablet presses requires reliable in-process tablet testing. The AutoTest 4 can be fully integrated with a great variety of tablet presses from different manufacturers. Tablet samples are automatically diverted at regular intervals and measured values are transferred in real-time directly to the tablet press controller. When equipped with the respective option, the tablet press can automatically self-adjust based on measured values and effectively prevent waste production (e.g. caused by drift). Time-to-evaluated-result, respectively the time until corrective actions are taken during a production run, is thereby reduced to an absolute minimum. In addition, automatic sampling at regular intervals and self-adjustment of the tablet press allows minimal operator interaction.

## Simplified setup with EasyTouch™

Equipped with the integrated EasyTouch™ user interface, the AutoTest 4 can be operated as a stand-alone unit whenever needed while maintaining full online capability. This is particularly useful during setup of the tablet press when operators need to quickly perform tests on a small number of samples before starting production. In addition, the EasyTouch™ interface also allows programming of up to 100 different products including nominal values and limits – providing additional flexibility to use the tester stand-alone anytime. Test results are always displayed on the touch screen during testing even when operated online. For tablet presses that do not allow for the performance of calibration tasks via the press controller, the EasyTouch™ interface features menu-guided calibration routines including printing of reports via USB or the Ethernet LAN interface.



→ Online testing with full feedback loop




→ User-friendly stand-alone operation with EasyTouch™

## Integration with any tablet press

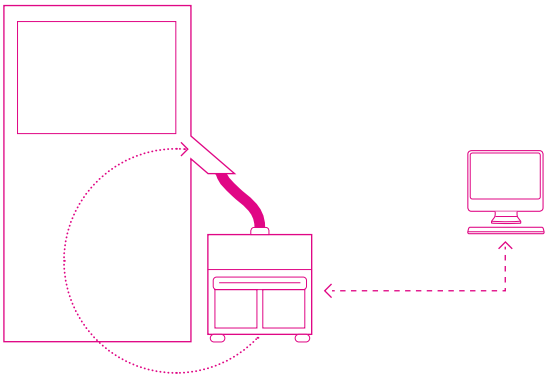
If self-adjustment of the tablet press is not desired or not possible (e.g. with older press models), the AutoTest 4 can be mechanically integrated with virtually any type of tablet press. The integration options range from externally triggering an existing sampling gate of a tablet press (or deduster) to installation of a separate diverter at the press outlet.

Controlled by PC software, tests are automatically performed at regular intervals (= test plan function) and test results are stored electronically in a database. To alert the press operator in case of limit violations, different alarms can be programmed to trigger an external (audible) alarm system or to automatically stop the tablet press.

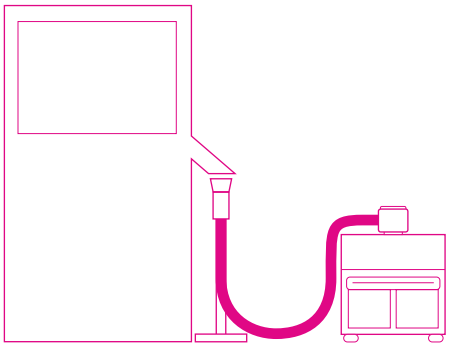
## Air transport system

Depending on the desired combined system layout, gravity-feeding diverted tablet samples directly to the AutoTest 4 may not be possible. In such cases, a venturi-powered system transports tablets from the press outlet to the tester which can then be positioned at a distance.

For double-sided presses, the air transport system allows for automatic sampling from two press outlets using one centrally positioned tester. In its standard configuration, the AutoTest 4 allows the control of two air transport systems and two diverters – regardless of whether the instrument itself is controlled by the tablet press or by a PC for automatic sampling.



→ Automatic sampling by triggering the sampling gate of the tablet press



→ Air transport system with venturi allows positioning of the tester at a distance

→ Air transport system for a double-sided tablet press: the brake cyclone gently slows down tablet samples arriving at the AutoTest 4

# Modular Design

Customize the AutoTest 4 to your individual needs! A great variety of standard options and accessories allow you to tailor functionalities to your specific requirements. From exchangeable chutes, magazine feeder and air transport system to models with integrated wheels, sample collector and belt feed.

**L-Model with linear feed track**
For direct tablet press integration with single tablet feeding capability, the AutoTest 4-L without vibratory bowl feeder reduces overall test cycle time. Single tablets are fed directly onto the linear vibratory feed track for sequential measuring. Also available with integrated sample collector.

**B-Model with belt feed**
For custom applications (e.g. integration with a third-party handling system), the AutoTest 4-B is equipped with a belt feed. Feeding is activated by the external device after a test sample has been placed on the belt. The belt feed can also be used for tablet presses with single tablet feeding capability.

**Sample collector**
The integrated sample collector with 12 collection bins is used to collect tablets from different test runs or at preset intervals. Collection methods can be programmed. Depending on your requirements, different models with sample collector in front or in drawer are availble.

**Exchangeable chutes**
Chutes with or without groove at the measuring stations. Grooves prevent round test samples (e.g. capsules) from rolling during transport. Fast change-over including balance plate.

**Custom SmartRake™**
Quick-change transport rake with customized paddles for special tablet shapes. Complete change-over within seconds and without tools. Retrofitting is possible anytime and doesn't require modifications of the AutoTest 4.

**12-magazine feeder**
Allows setup of up to 12 different products to be loaded concurrently. Retrofitting possible for all models with vibratory bowl feeder.

**Mobility options**
Integrated wheels or transport trolley to easily move the AutoTest 4 on the production floor.

**Air transport system / Diverter**
For automatic IPC in combination with a tablet press. Allows tests to be started during production without operator interaction. Retrofitting possible for all models with a vibratory bowl.

# Models

Six basic AutoTest 4 models have been pre-configured to meet most common QC and IPC requirements. Additional accessories and options to further extend their capabilities are available for all models. Ask your local representative for more details.

### Standard-Model

438 mm
587 mm
Top view

438 mm
554 mm
Front view

### SC-Model

528 mm
905 mm
Top view

528 mm
594 mm
Front view

### RC-Model

528 mm
905 mm
Top view

528 mm
862 mm
Front view

### HC-Model

438 mm
1002 mm
Top view

438 mm
737 mm
Front view

### L-Model

438 mm
632 mm
Top view

438 mm
542 mm
Front view

### B-Model

438 mm
678 mm
Top view

438 mm
542 mm
Front view

## Technical Specifications

| | | All AutoTest 4 models |
|---|---|---|
| **Weight** | Measuring range | Up to 100 g |
| | Resolution | 0.1 mg |
| | Units of measure | mg / g |
| **Thickness** | Measuring range | Up to 15 mm (0.6") |
| | Resolution | 0.01 mm (0.00039") |
| | Units of measure | mm / inch |
| **Diameter** | Measuring range | Up to 25 mm (1.0") |
| | Resolution | 0.01 mm (0.00039") |
| | Units of measure | mm / inch |
| **Hardness** | Measuring range | Standard: up to 400 N; Optional: 50 N / 500 N / 800 N |
| | Accuracy | Better than +/- 1 N |
| | Units of measure | N, Sc, Kp, programmable user-defined factor (based on N) |
| **Power supply** | EU-Standard | 230 V / 50 Hz |
| | US-Standard | 115 V / 60 Hz |
| | Special (on request) | 230 V / 60 Hz or 115 V / 50 Hz |
| **CE Conformity** | | All AutoTest 4 models fully comply with all CE and EMC equipment guidelines relative to mechanical and electrical safety and electromagnetic compatibility. |

| | | Standard | SC | RC | HC | B | L |
|---|---|---|---|---|---|---|---|
| **Configuration** | Vibratory bowl feeder | ● | ● | ● | ● | – | – |
| | Linear feed track | ● | ● | ● | ● | – | ● |
| | Belt feed | – | – | – | – | ● | – |
| | Sample collector | – | ● | ● | ● | ○ | ○ |
| **Weight** | (without packaging) | ca. 80 kg (176 lbs) | ca. 100 kg (220 lbs) | ca. 115 kg (253 lbs) | ca. 105 kg (231 lbs) | ca. 75 kg (165 lbs) | ca. 77 kg (170 lbs) |
| **Dimensions** | Width | 438 mm (17.3") | 528 mm (20.8") | 528 mm (20.8") | 438 mm (17.3") | 438 mm (17.3") | 438 mm (17.3") |
| | Height | 554 mm (21.8") | 594 mm (23.4") | 862 mm (33.9") | 737 mm (29") | 542 mm (21.3") | 542 mm (21.3") |
| | Depth | 587 mm (23.1") | 905 mm (35.6") | 905 mm (35.6") | 587 mm (23.1") | 632 mm (24.8") | 678 mm (26.7") |
| **PC Software** | TabStat™ Pro | ○ | ○ | ○ | ○ | – | – |
| | q-doc | ○ | ○ | ○ | ○ | – | – |
| **Options** | 12-magazine feeder | ○ | ○ | ○ | ○ | – | – |
| | Air transport system | ○ | ○ | ○ | ○ | ○ | ○ |
| | Transport trolley | ○ | – | ○ | ○ | ○ | ○ |
| | EasyTouch™ | ○ | ○ | ○ | ○ | ○ | ○ |
| | Integrated wheels (S) | ○ | ● | ○ | ○ | ○ | ○ |
| | Exchangeable linear chutes | ○ | ○ | ○ | ○ | ○ | ○ |
| | Custom SmartRake™ | ○ | ○ | ○ | ○ | ○ | ○ |

● included ○ optional – not available

Technical specifications are subject to change without prior notice. Products illustrated in this brochure may include options or modifications not fitted as standard. No liability for errors and omissions.

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