

Natoli Engineering, founded in 1973, is the primary source of tablet compression tooling, presses, parts, accessories and hands-on training for hundreds of pharmaceutical, nutritional, confectionary and industrial tablet manufacturers throughout the world.

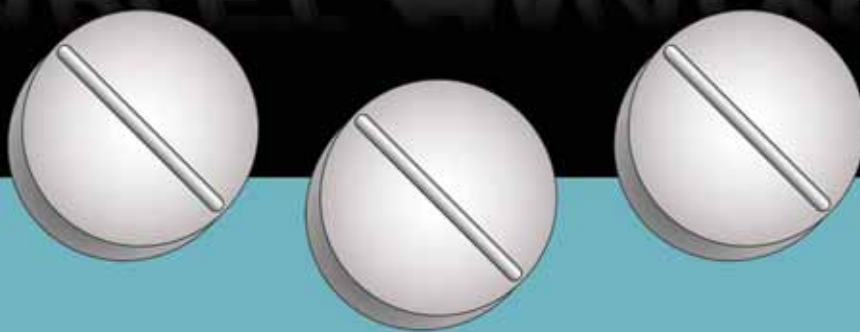
Natoli has created this catalog in support of the tablet compression industry. The color-coded sections are filled with an assortment of quality products to meet a variety of set-up, inspection and maintenance needs. Please reference the index located in the back of the catalog to locate specific items. Orders of any size and type are welcome, including special requests and custom requirements. All of the products listed in this catalog are available for shipment worldwide.

No matter what your tablet compression needs are, we look forward to helping your business succeed.

Natoli Engineering... You demand. We deliver.



TABLET ANALYSIS





Natoli offers a comprehensive range of tablet analysis equipment, supplies and software. All of our testing instruments meet pharmaceutical standards worldwide, allowing for global distribution to manufacturing companies. Applications can be met in production, development and quality-assurance departments for the production of tablets, capsules, suppositories, ampoules, candies and other solid dosage forms. Full IQ/OQ documents are available for validation purposes.



Automated Powder Analyzer

Abbreviations Key

- | | |
|--|-------------------|
| ◆ ISO = International Organization for Standardization | ◆ N = Newton |
| ◆ IEC = International Electrotechnical Commission | ◆ g = Gram |
| ◆ CFR = Code of Federal Regulations | ◆ mm = Millimeter |
| ◆ USP = United States Pharmacopeia | ◆ in = Inch |
| ◆ EP = European Pharmacopeia | ◆ dia = Diameter |
| ◆ FDA = Food and Drug Administration | ◆ V = Volt |
| ◆ QC = Quality Control | ◆ Hz = Hertz |
| ◆ rpm = Revolutions Per Minute | ◆ W = Watt |
| ◆ SC = Strong Cobb | ◆ L = Liter |
| ◆ Kp = Kilopond | |

Stainless Steel Automated Powder Analyzer

The Powder Analyzer measures the flow characteristics of granules and powders in compliance with EP and ISO 4324 (12/83) Standards. This instrument tests powder flow time, measures the cone angle and weight of the collected powder mound and calculates the density and the volume of the powder mound as well as EP “flowability” results. EP “flowability” is a measurement of the flow time of a 100g powder sample through a specified pouring nozzle.

A conical funnel, which can be equipped with different pouring nozzles, receives the powder to be tested. The analytical balance is placed inside the instrument housing and holds the product collecting dish. The electrical stirrer attached to the main instrument may be used for powders that do not flow due to a high percentage of fine.

This instrument is perfect for comparing batches of powders supplied by the same manufacturer over a period of time or for similar materials supplied by different manufacturers. The flow characteristics can quickly and easily be determined as a QC tool for inter-batch reproducibility, as this may have a distinct bearing on the ease of production, especially if powders are capable of agglomeration and cohesion over time.

Why are powder flow characteristics important?

- ◆ Reduction in cost of raw process materials: reject bad batches before processing
- ◆ Ensure powder quality and consistency from the same or different suppliers
- ◆ Maintain the optimum formulation for the process concerned
- ◆ Maintain the quality and consistency of the final product
- ◆ Investigate, maintain and verify the quality of dry mixes
- ◆ Develop new processes for powders set to be formulated into end products
- ◆ Confirm moisture effects: use of powders in open systems in different climates

Features

- ◆ Variable stirrer speeds: 5 – 25 rpm
- ◆ Pouring nozzles (2 sets of 3 nozzles)
- ◆ Built-in balance for easy viewing and operation
- ◆ Built-in Thermo Printer
- ◆ RS-232 serial interface

Part No.	Item Description
LE 0625	Powder Analyzer



Replacement Items

Part No.	Item Description
LE 0680	Stainless Steel Pouring Nozzles Set 1: (6, 8, 10mm nozzles) Set 2: (10, 15, 25mm nozzles)

Tablet Hardness Testers

Stainless Steel Tablet Hardness Testers

Tablet Hardness Testers measure the compressive strength of a tablet. Each tester includes fully-compliant CFR software to meet demands for traceability and data security.

3-in-1 Tablet and Soft-Gel Hardness Tester

The 3-in-1 Tablet and Soft-Gel Hardness Tester measures thickness (up to 15mm), dia/length (up to 40mm) and hardness (up to 300N with an option to increase to 500N). The instrument can be connected to a printer.

Features

- ◆ Measurement units: in, mm, SC, Kp and N
- ◆ Special hardness test for soft-gel capsules
- ◆ Linear Force and Constant Velocity Modes
- ◆ Displays individual test results
- ◆ RS-232 serial interface

Part No.	Item Description
LE 0626	3-in-1 Hardness Tester



Optional Accessories

Part No.	Item Description
LE 0681	Software (Please specify equipment and users)
LE 0682	Instrument Recalibration
LE 0683	Oblong Tension Strength Test Insert (12 – 16mm)
LE 0684	Oblong Tension Strength Test Insert (16 – 19mm)

Tablet Hardness Testers

Use this instrument to test larger tablets (up to 60mm) of all shapes and sizes. Changing test jaws is not required. Depending on hardness, throughput is approximately 6 – 10 samples per minute. The tester has a Plexiglas® screen for user protection.

Features

- ◆ Measurement units: N, Sc and Kp
- ◆ Full statistical calculation: mean, standard and absolute deviation
- ◆ Linear Force and Speed Increase Modes
- ◆ Max and Min test results
- ◆ Built-in Thermo Printer
- ◆ RS-232 serial interface

Part No.	Item Description	Range
LE 0627	Tablet Hardness Tester	Up to 300N
LE 0628	Tablet Hardness Tester	Up to 500N



Replacement Items

Part No.	Item Description
IN 7550	5-Pack Thermo Paper Rolls

Optional Accessories

Part No.	Item Description
LE 0682	Instrument Recalibration

Manual Friability Testers

Stainless Steel Manual Friability Testers

Friability and abrasion are the testing criteria for the mechanical strength of tablets and cores. Manual Friability Testers utilize either a single or double drum configuration and will accept both conventional “Roche” and “Abrasion” drums. The standard “Roche” drum (friability drum) causes samples to roll and fall during the friability test. The “Roche” drum is available with an optional anti-static coating. The “Abrasion” drum continuously stresses the sample through contact with lamellas (slats within the drum). Testers can be equipped with an optional retractable 10° angled footplate as specified by USP for larger tablets (dia greater than 13mm).

Features

- ◆ Fixed speed drum rotation: 25 rpm
- ◆ Variable speed drum rotation: 20 – 70 rpm
- ◆ Drum accuracy ± 1 rpm
- ◆ Select total number of drum revolutions from 1 to 1999
- ◆ Select a testing time from 1 to 9999 seconds
- ◆ Plexiglas® (Perspex) Drum(s)

Part No.	Item Description
LE 0630	Single Drum Fixed Speed Friability Tester
LE 0631	Double Drum Fixed Speed Friability Tester
LE 0632	Single Drum Variable Speed Friability Tester
LE 0633	Double Drum Variable Speed Friability Tester



Replacement Items

Part No.	Item Description
LE 0686	Right-Hand Standard Roche Drum
LE 0687	Left-Hand Standard Roche Drum
LE 0688	Right-Hand Anti-Static Roche Drum
LE 0689	Left-Hand Anti-Static Roche Drum
LE 0690	Right-Hand Abrasion Drum
LE 0691	Left-Hand Abrasion Drum

Optional Accessories

Part No.	Item Description
LE 0682	Instrument Recalibration
LE 0692	10° Angled Footplate

Stainless Steel Automated Friability Testers

Automated Friability Testers are virtually silent and can be set to rotate at speeds from 20 – 60 rpm. The tester has separate drums mounted on a single axis and can accept both conventional “Roche” and “Abrasion” drums. Automated Friability Testers have individual stainless steel collectors that the samples are discharged into once the test is finished. Testers can be equipped with an optional retractable 10° angled footplate as specified by USP for larger tablets (dia greater than 13mm).

Features

- ◆ Drum rotation speed: 20 – 60 rpm
- ◆ Drum accuracy ± 1 rpm
- ◆ Plexiglas® (Perspex) Drum(s)
- ◆ 2-piece drums for simplified cleaning
- ◆ Specify 115 or 220V (50/60Hz)

Part No.	Item Description
LE 0634	Three Drum Friability Tester
LE 0635	Six Drum Friability Tester



Replacement Items

Part No.	Item Description
LE 0686	Right-Hand Standard Roche Drum
LE 0687	Left-Hand Standard Roche Drum
LE 0688	Right-Hand Anti-Static Roche Drum
LE 0689	Left-Hand Anti-Static Roche Drum
LE 0690	Right-Hand Abrasion Drum
LE 0691	Left-Hand Abrasion Drum

Optional Accessories

Part No.	Item Description
LE 0682	Instrument Recalibration
LE 0692	10° Angled Footplate

Manual Disintegration Testers

Manual Disintegration Testers

The Disintegration Tester is a silent, vibration-free instrument that tests the disintegration times of tablets, capsules and other solid dosage forms. Every two seconds the stroke rate is self-adjusted. The stroke height is preset by the eccentric drive mechanism. The baskets, which hold the tubes and disks, are placed into a stainless steel holder and then moved smoothly into the testing medium. Depending on the operating procedure, the test is either automatically stopped if the preset time expires or manually stopped if the operator aborts the test. The basket always stops in the highest mechanical position. The water circulation system is fully protected from overheating. A digital display shows the elapsed testing time and "Recall" displays any preset time. The standard "A" basket is supplied with six glass tubes and six disks for checking tablets up to 21mm. The optional "B" basket is supplied with three glass tubes and three disks for checking tablets up to 33mm. "A" and "B" baskets are interchangeable.

Features

- ◆ Stroke height set to 55mm at 30 strokes per minute
- ◆ Adjustable number of strokes
- ◆ Auto stop at end of test
- ◆ Basket automatically stops at the highest mechanical position
- ◆ Digital display of elapsed testing time
- ◆ Pre-selectable total testing time from 1 second to 24 hours
- ◆ Water temperature is controlled by built-in thermostat
- ◆ Interchangeable baskets

Part No.	Item Description
LE 0636	Single "A" Basket Disintegration Tester (For tablets up to 21mm)
LE 0637	Three "A" Basket Disintegration Tester (For tablets up to 33mm)



Optional Accessories

Part No.	Item Description
LE 0682	Instrument Recalibration
LE 0693	Single "B" Basket (For tablets up to 33mm)

Stainless Steel Semi-Automated Disintegration Testers

This instrument fulfills the required levels of security and results reporting currently required by FDA Regulations. It offers a simple interface as well as a printout of the method, medium and results, even in manual mode. At the end of a test run, a test report can be printed showing the minimum and maximum disintegration time, statistics, as well as bath and media temperature, stroke frequency and product data for each sample tube. The standard “A” basket is supplied with six glass tubes and six disks for checking tablets up to 21mm. The optional “B” basket is supplied with three glass tubes and three disks for checking tablets up to 33mm. “A” and “B” baskets are interchangeable.

Features

- ◆ Upgradeable to a fully automated system
- ◆ IEC printer port
- ◆ Built-in auto time log
- ◆ Interchangeable baskets
- ◆ Recall of stored methods
- ◆ Auto electric lift basket
- ◆ Store up to 16 methods

Part No.	Item Description
LE 0638	Single “A” Basket Disintegration Tester (For tablets up to 21mm)
LE 0639	Double “A” Basket Disintegration Tester (For tablets up to 21mm)
LE 0640	Three “A” Basket Disintegration Tester (For tablets up to 21mm)
LE 0641	Four “A” Basket Disintegration Tester (For tablets up to 21mm)



Optional Accessories

Part No.	Item Description
LE 0682	Instrument Recalibration
LE 0693	Single “B” Basket (For tablets up to 33mm)

Pilot Plant System

PHG Pilot Plant System with Universal Motor Drive (UAM) and Universal Reduction Gear (UGD)

The PHG Pilot Plant System is specifically designed for new product development, scaling up from test to small batch quantities. The Pilot Plant System is also suitable for pharmacy teaching departments and for the manufacture of low volume, specialty products.

The Universal Motor Drive (UAM) employs an industry-standardized flange system to connect various interchangeable attachments for a variety of applications. Attachments include mixers, stirrers, granulators and product enhancing tools such as tablet coaters. The UAM is compatible with attachments from other manufacturers such as Erweka and Copley Scientific.

The UGD gear drive is attached to the UAM Motor in order to reduce the drive speed by a ratio of 10:1 and to offer different operating angles (0 – 80°) for the attachments driven by the system.

Features

- ◆ Speed range: 40 – 400 rpm
- ◆ 700W motor
- ◆ Gear ratio: 1:3.42

Part No.	Item Description
LE 0149	UAM – 115V Universal Motor Drive
LE 0150	UAM – 240V Universal Motor Drive
LE 0151	UGD – Universal Reduction Gear

Universal Attachments

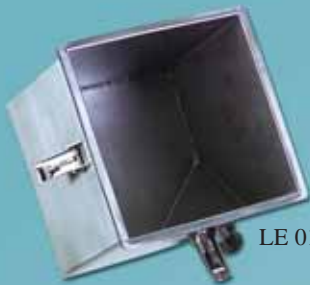
Part No.	Item Description	~Volume (L)
LE 0152	Cube Mixer	3.5
LE 0153	Cube Mixer	7.5
LE 0154	Y-Cone Mixer	8.0
LE 0155	Double Cone Mixer	3.0 – 4.5
LE 0156	Drum Hoop Blender	solids (2.0 – 2.5) liquids (3.0 – 4.0)
LE 0157	Share Mixer	7.0
LE 0158	Coating Pan	15.0
LE 0159	Pelletiser	3.0
LE 0160	Wet Granulator	N/A

Sieving Instruments (For Wet Granulator)

Part No.	Mesh Width	Mesh
LE 0161	2.0	10
LE 0162	1.0	14
LE 0163	1.25	16
LE 0164	0.80	20
LE 0165	0.70	24
LE 0166	0.63	30
LE 0168	0.25	60
LE 0169	0.18	80
LE 0170	0.15	100

*Mesh size determines throughput for Wet Granulator.





LE 0152



LE 0157



LE 0154



LE 0158



LE 0155



LE 0159



LE 0156



LE 0160

