



**TABLET
COMPRESSION
ACCESSORIES
CATALOG**
6TH EDITION



NATOLI

Welcome

Welcome to the only comprehensive tablet compression accessories catalog in the industry. We've packed this catalog with hundreds of carefully selected products (many of them exclusive) that will help you to improve tooling life, tablet quality, and overall efficiency.

World Headquarters &
Tool Manufacturing Facility
St. Charles, MO, USA

Who We Are



When Carmelo Natoli established Natoli Engineering in 1973, his philosophy was simple:

“ **Deliver a quality tablet compression tool at a fair price, with exceptional customer service.** ”

That philosophy, along with our commitment to innovation, has made Natoli Engineering a world leader in the tablet compression tooling industry.

We are committed to developing ground-breaking solutions through research and development of steel types, punch coatings, and tooling design. We also develop our own tooling accessories to provide solutions for tooling and tablet analysis, storage, and more.

Tooling

Our tablet compression punches and dies are manufactured from the highest quality steel for optimum strength and long-lasting durability. A hallmark of Natoli Engineering.

Our tooling is made from high-grade steel, quarantined and tested to our stringent quality specifications and then passed through a computerized vacuum internal quench heat-treating system—guaranteeing batch-to-batch consistency. These extra measures ensure every punch and die we manufacture will last longer and perform better than other tooling you may have used in the past.

We offer multiple custom tool configurations and design options to meet your specific needs and specifications.





Steel Preparation Facility
St. Charles, MO, USA



Press Refurbishing & Technical Training Facility
St. Charles, MO, USA



Turret Manufacturing Facility
Chesterfield, MO, USA



Parts & Accessories Distribution Center
Chesterfield, MO, USA

Tablet Presses & Refurbishing

Natoli tablet presses provide superior performance, whether your product requires a single-station tablet press for research and development or a heavy-duty, high-output, automated press, we have you covered with our extensive lineup of specialized tablet presses.

In addition, we offer rebuilding services for most makes and models of tablet presses. Our expert engineers customize and strategically rebuild each press to exceed the quality and functionality of the original.

Tablet Press Replacement Parts

Natoli maintains a comprehensive inventory of tablet press replacement parts—more than 250,000—ready for immediate delivery worldwide. We stock everything from die locks, cam tracks, and pressure rollers to turrets, feeder assemblies, and more. Our top-quality parts are available for nearly every make and model of press and meet or exceed original equipment manufacturers (OEMs) specifications.

Training

In 2009, Natoli Engineering unveiled the first non-commercial training center dedicated solely to the tablet compression industry. This facility provides valuable hands-on training that extends well beyond textbooks and webinars. Seminar topics have included: Basics of Tablet Shapes and Design, Tablet Press Set-Up and Operation, Hands-On Tool Maintenance and Polishing, Challenges in Tablet Manufacturing and QC/QA, and Factors Affecting Tablet Characteristics.



Services

Our technical services experts lead the industry in training and have decades of professional experience to help you with tablet design, steel and coating selection, and troubleshooting. Odds are excellent that we have seen your issue before and can develop a solution to give you higher quality tablets in the shortest period of time. We've even created three divisions to provide specialized services to our clients—Natoli Scientific and Natoli Metallurgy.

NATOLI **METALLURGY**

a division of Natoli Engineering Company, Inc.

Natoli Engineering is the only tooling manufacturer with an on-staff metallurgist. From its state-of-the-art lab, Natoli Metallurgy can aid in material selection, wear testing, and failure analysis of steels, encapsulation and packaging machine parts, and more. Our metallurgist can suggest materials and treatments that significantly improve the manufacturing process. Better material selection can provide a higher ROI by increasing tablet production, increasing quality, and reducing parts wear.

NATOLI **SCIENTIFIC**

a division of Natoli Engineering Company, Inc.

Founded to solve your most complex compression tooling challenges, Natoli Scientific uses testing, research and experimentation to find solutions to the industry's most pervasive problems. Natoli Scientific is dedicated to providing proactive and customized solutions to combat common manufacturing issues such as sticking, picking, capping, lamination, and tablet press tool binding. We have the knowledge to address scale-up issues and the ability to modify formulations through designed experiments.

INSTITUTE **FOR INDUSTRIAL PHARMACY** **RESEARCH & DEVELOPMENT** at Long Island University

In an effort to advance tableting science, Natoli has established the Natoli Institute for Industrial Pharmacy Development and Research in partnership with the Arnold and Marie Schwartz College of Pharmacy and Health Sciences at Long Island University. In addition to providing a facility for students to learn industrial pharmacy unit operations for solid oral dosage forms, the Institute is a resource for customers to have their tableting problems investigated with sticking, picking, tablet disintegration/dissolution, formulation and feasibility experiments.



Natoli Steel

At Natoli Engineering, no steel is cut until it is confirmed to meet our stringent steel quality specifications. Our steel is quarantined and tested according to guidelines governed by the American Society for Testing & Materials. We take pride in offering steel of the highest quality and consistency and we have the test results to prove it.

We maintain the largest inventory of premium tool steel in the industry, which allows us to customize your tooling to meet the exact requirements of your products and process.

Trust the world's leading tablet compression tooling manufacturer. Trust Natoli.

You Demand. We Deliver.





∞ thank you from our ∞

Natoli Family



Throughout the catalog, you'll see "Must Have" products. Natoli recommends these products for our customers to maintain tablet quality and increase the longevity of their tooling. From maintenance to compression to the lab, these products will improve efficiency and reduce cost in your operation.

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ADJUSTABLE TORQUE SCREWDRIVER WITH "CLICK" DESIGN

A distinct "click" is felt and heard when proper torque is reached.

Recommended for torquing lower punch retainer screws.

- Includes 1/4" hex and bit
- Meets ASME B 107.14M and ISO 6789 specifications for:
 - ± 6% present value accuracy from 20 – 100% of capacity
 - ± 1.2% accuracy when set below 20% of capacity
 - Specifications met in CW and CCW directions



Part No.	Item Description	Range
SU 0010	Adjustable Torque Screwdriver	7-36 in-lb

ERGONOMIC PRESET TORQUE SCREWDRIVERS

Recommended for torquing lower punch retainer screws.

- Quick-release bit holder for insert and power bits
- ± 6% EN ISO 6789 accuracy
- 1/4" bits DIN 3126-C 6, 3 and E 6, 3



Part No.	Item Description	Range
SU 0090	Preset Torque Screwdriver	2.5-11.5 in-lb
SU 0091	Preset Torque Screwdriver	11-29 in-lb

DIE LOCK HEX ADAPTERS

- 1/2" Drive for use with L-handle torque wrench
- 3/8" Drive for use with T-handle torque wrench
- 1/4" Drive for use with torque screwdriver or Manesty lower punch retainer screws



Part No.	Item Description	Drive Size	Adapter Size
SU 0008	Die Lock Hex Adapter	1/2"	5/16"
SU 0009	Die Lock Hex Adapter	1/2"	3/8"
SU 0015	Die Lock Hex Adapter	3/8"	5/16"
SU 0016	Die Lock Hex Adapter	3/8"	3/8"
SU 0052	Die Lock Hex Adapter	1/4"	1/4"
SU 0057	Die Lock Hex Adapter	3/8"	7 mm
SU 0059	Die Lock Hex Adapter	1/2"	7 mm
SU 0061	Die Lock Hex Adapter	1/4"	2.5 mm
SU 0040	Die Lock Hex Adapter	1/2"	8 mm
SU 0065	Die Lock Hex Adapter	1/2"	10 mm

DIE LOCK T-HANDLE WRENCHES

Use to install die locks prior to torquing or die lock removal.

Part No.	Hex Size
SU 0070	5/16"
SU 0071	1/4"
SU 0072	3/8"
SU 0073	7 mm

Part No.	Hex Size
SU 0074	10 mm
SU 0076	8 mm



PRESET TORQUE WRENCHES

Improperly torqued dies can crack, split or “pop-up” resulting in damage to the feed frame and tooling. This can cause thousands of dollars in repair costs, unsafe working conditions, unwanted downtime and a significant reduction in product output. Using preset torque wrenches ensure dies are torqued to the exact specifications listed in the tablet press manual. **Special order available.**



L-Handle Torque Wrenches ½" Drive with "Click" Design

Click-type wrenches are a must to achieve specified torque.

A distinct “click” is felt and heard when proper torque is reached.

- **Mandatory for tightening all types of die lock screws**
- Re-calibrate in-house with a torque analyzer (See page 10)

Part No.	Ft-lb	Nm.	Handle Color
SU 0162	7.38	10	Light Green
SU 0001	10	13.56	Light Blue
SU 0158	11.06	15	Maroon
SU 0002	12	16.27	White
SU 0023	13	17.63	Dark Green
SU 0003	14	18.98	Orange
SU 0004	15	20.34	Red
SU 0005	20	27.11	Yellow
SU 0006	25	33.90	Black
SU 0007	30	40.67	Blue



T-Handle Torque Wrenches ⅜" Drive

Critical for properly torquing upper punch key screws and multi-tip tooling assemblies.

Part No.	Ft-lb	Nm.
SU 0186	7.38	10
SU 0175	10	13.56
SU 0187	11.06	15
SU 0177	12	16.27
SU 0176	13	17.63
SU 0178	14	18.98
SU 0179	15	20.34
SU 0181	20	27.11



T-Handle Torque Wrenches ¼" Drive

Critical for properly torquing upper punch key screws and multi-tip tooling assemblies.

Part No.	In-lb	Nm.	For Use With
SU 0200	8.9	1.0	Silver* M3 Punch Key Screws
SU 0201	16.5	1.86	Black** M3 Punch Key Screws or Silver* M4 Punch Key Screws
SU 0202	37.4	4.22	Black** M4 Multi-Tip Cap Assembly



*Silver screws are made of stainless steel.

**Black screws are made of carbon steel.

ANALOG TORQUE WRENCH ANALYZERS WITH ADAPTERS

Torque wrenches need periodic verification to ensure accuracy. Torque analyzers accurately confirm torque settings. *Required adapters included.*

- ± 2% indicated value accuracy from 20 – 100% of capacity
- Graduated dial displays CW or CCW torque value
- Compatible with ALL torque wrenches
- In-lb analyzer confirms torque settings up to 75 in-lb
- Ft-lb analyzer confirms torque settings up to 50 ft-lb



Part No.	Item Description
MA 5059	Ft.-lb Torque Analyzer (½" Drive)
MA 5159	In-lb Torque Analyzer (¼" Drive)
Adapters	
Part No.	Item Description
SU 0054	½" to ½" Adapter
SU 0055	½" to ¾" Adapter
SU 0056	¼" to ¼" Adapter

VERITORQ® DIGITAL TORQUE ANALYZERS

The VeriTorq® analyzer quickly verifies proper torque settings for click-type and cam-over torque wrenches and screwdrivers. Proper torque settings prevent potential press and tooling damage and reduce downtime.

- Meets or exceeds ASME B 107.24M and ISO 6789
- ± 1% indicated value accuracy from 10 – 100% of capacity
- For horizontal or vertical surfaces



Part No.	Item Description
MA 5161	VeriTorq® Digital Torque Analyzer (50 in-lb)
MA 5160	VeriTorq® Digital Torque Analyzer (80 ft-lb)
MA 5162	VeriTorq® Digital Torque Analyzer (100 in-lb)
MA 5163	VeriTorq® Digital Torque Analyzer (150 ft-lb)

PUNCH REPLACEMENT KEYS

Periodically replace keys to ensure proper alignment of keyed punches.

Worn keys can damage punches and turrets, causing expensive repairs and downtime.

Fixed Parallel Keys (Feather Keys)

Specify thread size when ordering

Part No.	Width x Length	Thread Size
MA 6151	¼ x 1¼"	#6-32
MA 6047	⅜ x 1"	M3 x 0.5 mm
MA 6147	⅜ x 25 mm	M3 x 0.5 mm
MA 6048	⅜ x 1¼"	M3 x 0.5 mm
MA 6049	⅜ x 1½"	M3 x 0.5 mm
MA 6152	⅜ x 1⅜"	M3 x 0.5 mm
MA 6153	¼ x 1¼"	M4 x 0.7 mm
MA 6064	⅜ x ¾"	#4-40
MA 6066	⅜ x 1"	#4-40
MA 6068	⅜ x 1¼"	#4-40
MA 6072	⅜ x 1½"	#4-40
MA 6070	⅜ x 1⅜"	#4-40



Hi-Pro Screw-In Keys

Specify thread size when ordering

Part No.	Width x Length	Thread Size
MA 6054	¼ x 1"	#6-32
MA 6155	⅜ x ¾"	M3 x 0.5 mm
MA 6156	¼ x 1"	M4 x 0.7 mm
MA 6050	⅜ x ¾"	#4-40
MA 6052	⅜ x 1"	#4-40



Stainless Steel Key Screws

Secure key in punch body

Part No.	Length	Thread Size
MA 6206	1⅞"	#6-32
MA 6207	12 mm	M3 x 0.5 mm
MA 6208	16 mm	M3 x 0.5 mm
MA 6209	20 mm	M3 x 0.5 mm
MA 6216	22 mm	M3 x 0.5 mm
MA 6210	25 mm	M3 x 0.5 mm
MA 6211	25 mm	M4 x 0.7 mm
MA 6212	30 mm	M4 x 0.7 mm
MA 6213	16 mm	M4 x 0.7 mm
MA 6215	16 mm (cut down head)	M4 x 0.7 mm
MA 6201	½"	#4-40
MA 6202	¾"	#4-40
MA 6203	⅝"	#4-40
MA 6204	⅞"	#4-40
MA 6205	1"	#4-40



Hi-Pro Press-In Keys

No threaded hole

Part No.	Width x Length
MA 7056	⅜ x ¾"
MA 6058	⅜ x 1"
MA 6060	¼ x 1"
MA 6062	⅝ x 1"



DIE DRIVING RODS WITH REPLACEABLE COMPOSITE TIPS



Prevent damage to dies and die pockets by using Natoli Die Driving Rods with replaceable composite tips.

Throw away your brass and steel die driving rods. They may cause press and/or product contamination.

- **Mandatory for use with carbide and ceramic-lined dies**
- Replacement tips can be purchased individually
- Custom sizes available upon request



Part No.	Barrel Dia.	Type	Replacement Tips
SU 0011*	0.75" 19.05 mm	B	SU 0017
SU 0012*	1.0" 25.4 mm	D	SU 0018
SU 0013	1.125" 25.58 mm	533/328-45	SU 0019
SU 0014*	1.25" 31.75 mm	DS3	SU 0020
SU 0021	0.983" 24.97 mm	Special	SU 0018
SU 0311	.75" 19.05 mm	8" 203.2 mm	SU 0017
SU 0312	1.0" 25.4 mm	8" 203.2 mm	SU 0018
SU 0314	1.0" 25.4 mm	5" 127 mm	SU 0018



*Only available in stainless steel.

TIGHT PUNCH REMOVAL TOOLS

The safest, most effective way to remove tight punches. Reduces potential for punch and turret damage.

Part No.	Barrel Dia.	Type
SU 0126	0.75" 19.05 mm	B
SU 0128	1.0" 25.4 mm	D
SU 0129	1.125" 25.58 mm	328/533-45
SU 0130	1.25" 31.75 mm	328/533-33 or DS3
SU 0132	1.50" 38.1 mm	DD2 or DDS2



PUNCH GUIDE PLUGS

The most safe, effective, and economical way to block auto-lubrication ports when blank dies are required.

Part No.	Item Description	Type
SU 0150	Keyed Punch Guide Plug	"B"
SU 0151	Keyed Punch Guide Plug	"D"



DIE SEAT CLEANER TOOLS

Cleans hard to reach die pocket corners.
Essential for properly seating dies.



Part No.	Dia.	Depth	Type
SU 0041	0.945"	0.875"	BB
SU 0042	0.8268"	0.875"	EU-BBS
SU 0043	1.1875"	0.875"	B
SU 0044	0.8661"	0.875"	BBS
SU 0045	1.312"	1.50"	533/328-45
SU 0047	1.50"	0.937"	D
SU 0048	1.3770"	0.985"	Kilian 25/32
SU 0049	1.50"	1.25"	DD2-31
SU 0051	1.623"	1.50"	533/328-33
SU 0053	2.0"	1.125"	DS3
SU 0036	2.124"	1.50"	DD2 or DDS2
SU 0050	1.1805"	0.9842"	Kilian 20/28

DIE INSERTION RINGS

Reduces die pocket damage by eliminating shaving of die pocket wall due to improper insertion.

- Decreases set-up time with faster die insertion
- Ensures vertical alignment of die to die pocket



Part No.	Inside Dia.	Height	Type
SU 0025	0.945"	0.775"	BB
SU 0027	1.1875"	0.775"	B
SU 0029	1.312"	1.25"	533/328-45
SU 0030	1.3786"	0.892"	Kilian 25/32
SU 0031	1.50"	0.837"	D
SU 0033	1.50"	1.25"	DD2-31
SU 0035	1.62"	1.25"	533/328-33
SU 0037	2.0"	1.125"	DS3
SU 0038	2.125"	1.375"	DD2 or DDS2
SU 0039	0.8666"	0.775"	EU-BBS Fette
SU 0046	0.8268"	0.875"	BBS Korsch/Kilian
SU 0032	1.3791"	0.884"	Kilian Rx43
SU 0034	1.654"	0.837"	
SU 0063	1.1820"	0.884"	Kilian 20/28

BLANK DIES

Use to block die pockets in unused stations.

Required to run a partial set of tooling.

Part No.	Application	Size
SU 7725	BD-1 "BB"	0.945 x 0.875"/24.003 mm
SU 7726	BD-2 "B"	1.1875 x 0.875"/30.1625 mm
SU 7727	BD-3 "D"	1.50 x 0.9375"/38.1 mm
SU 7728	BD-4 "DS3"	2.0 x 1.25"/50.8 mm
SU 7729	BD-5 "533/328-45"	1.3125 x 1.50"/33.3375 mm
SU 7730	BD-6 "533/328-33"	1.6245 x 1.50"/41.2623 mm
SU 7731	BD-7 "DD2-23"	2.125 x 1.50"/53.97 mm
SU 7732	BD-8 "EU-BBS"	0.8268 x 0.875"/21.00072 mm Korsch/Kilian
SU 7733	BD-9 "EU-BBS"	0.8661 x 0.875"/21.99894 mm Fette



STAINLESS STEEL SCOOP

316 grade stainless steel scoop for all types of granulation. Perfect for abrasive/corrosive granules.



Part No.	Capacity	Bowl Size
LE 3102	100 ml (3.4 oz)	2" x 4"
LE 3103	500 ml (2 cups)	3¾" x 5½"
LE 3104	1250 ml (5 cups)	5" x 7⅔"

TELESCOPING METAL INSPECTION MIRRORS

The perfect tool for inspecting die pockets and other hard-to-see angles. The telescoping handle reaches from a range of 16-34".

- Shatterproof
- Protective bag included

Part No.	Item Description	Size
IN 7542	Oblong Telescoping Inspection Mirror	2 x 3¾"
IN 7543	Round Telescoping Inspection Mirror	3¾"



RIGHT ANGLE PNEUMATIC DRILL

Use with ultra-stiff nylon brushes to quickly and effectively clean die bores, turrets, and punch guides.

Part No.	Item Description	Size
SU 0069	Right Angle Pneumatic Drill	¾" ID air hose



PRECISION STRAIGHT EDGE

Properly set feed frame platforms to ensure proper clearance.

- Constructed of tool steel
- Single beveled edge

Part No.	Size
SU 0136	12" x 1 ¹³ / ₃₂ " x 1 ¹ / ₆₄ "



PRECISION FEELER GAUGES

Reduce product loss by accurately setting feeders with precision feeler gauges.

- Each leaf marked with a decimal range of 0.0015 – 0.025" and a metric range of 0.038 – 0.610 mm
- Constructed of hardened and tempered steel



Part No.	Size
SU 0170	6" (152.4 mm)
SU 0156	12" (304.8 mm)

CAM ALIGNMENT PUNCHES

Use to ensure proper cam alignment. Eliminates tablet press and tooling damage caused by misaligned cams.



Part No.	Type
SU 0210	B
SU 0211	D
SU 0212	533/328-45
SU 0213	533/328-33
SU 0214	EU B
SU 0215	EU D
SU 0209	DD2-23
SU 0233	NP 100

TURRET GUIDE CLEANING BRUSHES

Natoli's line of custom, pharmaceutical-grade brushes feature high-density, ultra-stiff 612 nylon bristles and are heat and abrasion resistant. These brushes are available exclusively through Natoli.

ULTRA-STIFF NYLON BRISTLE BRUSHES

Excellent for proper punch guide cleaning.

- 12" Spiral tube brush (with loop end)



Part No.	Brush Dia.	Type
SU 0058	3/4"	B
SU 0060	1"	D
SU 0062	1 1/8"	533/328-45
SU 0064	1 1/4"	533/328-33 or DS3
SU 0066	1 5/16"	DD2-31

DIE POCKET SIDE-ACTION CLEANING BRUSHES

Use to clean die pockets to ensure accurate die seating.

- 12" Spiral tube brush (no loop)



Part No.	Brush Dia.	Type
SU 0100	0.945"	BB
SU 0101	1.187"	B
SU 0102	1.312"	533/328-45
SU 0103	1.500"	D
SU 0104	1.625"	533/328-33
SU 0105	2.000"	DS3
SU 0106	2.125"	DD2 or DDS2

STEEL BRUSH HOLDER

Use in pneumatic or electric drill chucks.

Part No.	Item Description	Size
SU 0121	Reusable Brush Holder	3 3/8 x 1/4"



Brush not included

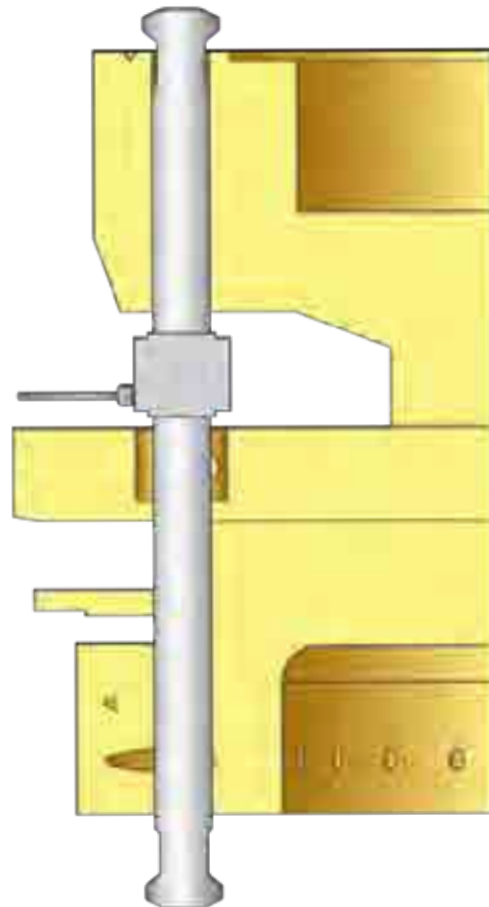
OVERLOAD AND STRAIN GAUGE CALIBRATION KIT

Use to accurately confirm machine calibration overload and strain gauge systems to prevent tool and press damage.

- NIST certified (Certificate of Calibration available upon request)
- Load cell verifies tonnage gauge values are accurate
- Periodically confirming gauge values will reduce potential press and tool damage
- Kit includes protective storage case
- Calibration punches must be ordered separately



Part No.	Item Description
IN 7759	Overload and Strain Gauge Calibration Kit
Overload Calibration Punches	
Part No.	Item Description
IN 7762	"B" Lower
IN 7763	"B" Upper
IN 7764	"D" Lower
IN 7765	"D" Upper
IN 7768	EU "B" Lower
IN 7769	EU "B" Upper
IN 7775	EU "D" Lower
IN 7774	EU "D" Upper
IN 7772	"B2" Short Lower
IN 7780	Special Order
Replacement Items	
Part No.	Item Description
IN 7760	Load Cell Indicator – NIST certified
IN 7761	Load Cell (0 – 10 tons) – NIST certified
SU 0146	Replacement Storage Case with foam insert



LOWER PUNCH SEAL STOP INSTALLATION TOOL

Our custom Seal Stop tool, which is to be positioned between the lower punch head and turret, helps prevent damage to punch tips and dies during set up.



Part No.	Item Description
MA 1114	Lower Punch Seal Stop Installation Tool

TABLET THICKNESS GAUGES

Provides quick and accurate check of overall tablet thickness.

- Includes a Certificate of Conformance
- May be purchased with a Certificate of Calibration for an extra fee

HANDHELD DIGITAL TABLET THICKNESS GAUGE

- Zero/ABS
- Inch/mm conversion
- SPC port
- Use with IN 7460 connecting cable (See page 62)



Part No.	Measuring Range	Accuracy	Throat
IN 7522	0 – 0.47"	± 0.001"	1.18"
	0 – 11.93 mm	± 0.015 mm	29.97 mm

DIGITAL QUICK MINI GAUGE

- Inch/mm conversion
- Low battery alarm
- Zero/ABS

Part No.	Measuring Range	Accuracy	Throat
IN 7502	0 – 0.5"	± 0.001"	0.91"
	0 – 12 mm	± 0.02 mm	23.11 mm



TABLET HARDNESS TESTERS

Tablet hardness testers are used to perform spot checks of tablet density during initial setup and production runs.

STAINLESS STEEL HANDHELD TABLET HARDNESS TESTER**

When new, this tablet hardness tester has an accuracy of $\pm 10\%$.

<u>Tablet Testing Range</u>	<u>Max Diameter</u>	<u>Max Thickness</u>
Standard Hardness Tester	3/4" (19.05 mm)	1/4" (6.35 mm)
Large Tablet Conversion Kit	1 3/16" (30.1 mm)	1/4" (6.35 mm)



Part No.	Item Description
SU 2495	Standard Hardness Tester
SU 2491	Large Tablet Conversion Kit

Replacement parts are available.

**This device is accurate enough for spot checks, but is not to be used for quality control judgements and should not be relied on as a test instrument.

PORTABLE HANDHELD TABLET HARDNESS TESTER

Offers the convenience of measuring tablet hardness outside the lab.



Features:

- Battery operated (includes charger)
- Automatic "0" reading on start up
- Collection tray

Specifications:

Hardness Range: up to 500 Newton
 Measuring Units: N, Kp, SC or LB
 Tablet Size: 2 mm to 28 mm (Length/Diameter)
 Power: 1.9v rechargeable battery/Universal Adaptor



Part No.	Item Description
LE 0645	Portable Hardness Tester with Printer Port

Optional Accessories

Part No.	Item Description
LE 0646	Printer
LE 0647	Calibrated Weight

PRESS SET-UP TOOLBOXES

Our heavy-duty press set-up toolboxes contain everything you need to properly set up a tablet press. Each toolbox comes customized with the necessary tools and accessories for your specific press model.

- Order by machine type and number of stations
- Available for special or modified tablet presses



Toolboxes Include:

- A. 6" feeler gauge
- B. 12" feeler gauge
- C. Punch guide cleaning brushes (2)
- D. Die pocket side-action brushes (2)
- E. Adjustable torque screwdriver*
- F. Preset torque wrench
- G. Die insertion ring
- H. Die seat cleaner tool
- I. Hex socket adapter
- J. Die lock T-Handle
- K. Precision straight edge
- L. Die driving rod with two replacement tips
- M. Tight punch removal tool
- N. Punch guide seal installation tool**
- O. Dial indicator with magnetic base for checking die table run-out
- P. Protective Storage Case

*Optional (Manesty Presses Only)

**Manesty Presses Only (not pictured)

Items A-O available for purchase separately



Part No.	Press Set-Up Toolbox for
SU 0240	Cadmach "BB"
SU 0241	Cadmach "D"
SU 0256	Courtoy "D" or Piccola 8-Station
SU 0257	CPT Stealth 30-Station or Sejong "D"
SU 0242	Fette "B"
SU 0243	Fette "BB"
SU 0244	Fette "D"
SU 0245	Kikusui "B"
SU 0258	Kikusui "BB"
SU 0273	Kikusui "D"
SU 0246	Korsch "B"
SU 0272	Korsch "D"
SU 0270	Kilian "B"
SU 0271	Kilian "D"
SU 0274	Kilian "BB"
SU 0247	Manesty "B" (with screwdriver)
SU 0259	Manesty "B" (without screwdriver)
SU 0248	Manesty "BB" (with screwdriver)
SU 0260	Manesty "BB" (without screwdriver)
SU 0249	Manesty "D" (with screwdriver)
SU 0261	Manesty "D" (without screwdriver)
SU 0266	Natoli NP-500-45
SU 0267	Natoli NP-RD10
SU 0315	Natoli NP-RD10A
SU 0316	Natoli NP-P20 or NP-RD20
SU 0254	Piccola "D"
SU 0255	Piccola "B" or Sejong "B"
SU 0250	Stokes "B" or Natoli NP-100-27 or Natoli NP-100-35
SU 0251	Stokes "BB" or Natoli NP-100-45
SU 0252	Stokes "D" or Natoli NP-250-16 or Natoli NP-250-20
SU 0253	Stokes "Premier"
SU 0262	Stokes 533/328-45
SU 0263	Stokes DS3-15 or Natoli NP-250-15
SU 0264	Stokes "DD2" 31-station
SU 0268	Stokes DD2-23 or DDS2-23
SU 0265	Stokes 533/328-33
SU 0141	Special Order Press Set-up Toolbox



ROTATING HEAD MAINTENANCE KIT

Use to accurately disassemble and reassemble rotating punch heads for lubrication and inspection.

Kit Includes:

- A. 5" V-Block and Clamp
- B. Punch Body Securing Block
- C. Pin Driver (for 5/32" dia. Slotted Spring Pins)
- D. Bag of 100 Slotted Spring Pins
- E. Head Alignment Gauge
- F. Die Countercheck
- G. Instructional DVD: *How to Disassemble and Assemble a Rotating Punch Head*
- H. Protective Storage Case

Part No.	Item Description
IN 8010	"B" Rotating Head Maintenance Kit
IN 8011	"D" Rotating Head Maintenance Kit
IN 8012	533/328 Rotating Head Maintenance Kit
Optional Accessories	
SU 2531	Natoli Moly Supreme NLGI #2 Grease (14 oz.)
MA 1009	Steel Hammer



"B" Rotating Head Maintenance Kit Shown



MULTI-TIP MAINTENANCE KIT

Easily disassemble and reassemble assembly-type multi-tip punches for proper maintenance.

Kit Includes:

- A. 5" V-Block and Clamp
- B. Punch Body Securing Block
- C. Alignment Gauge
- D. Pin Drivers (for 3 mm dia. Coiled Spring Pins) for installation and removal
- E. Instructional DVD: *Multi-Tip Punch Assembly*
- F. Protective Storage Case

Part No.	Item Description
MA 1110	"BB" Multi-Tip Maintenance Kit
MA 1111	"B" Multi-Tip Maintenance Kit
MA 1112	"D" Multi-Tip Maintenance Kit

Replacement Parts	
Part No.	Item Description
MA 1001	"BB" Alignment Gauge (#1 Die)
MA 1002	"B" Alignment Gauge (#2 Die)
MA 1003	"D" Alignment Gauge
MA 1004	100 "B" Coiled Spring Pins
MA 1005	100 "D" Coiled Spring Pins
MA 1009	Steel Hammer

Please note that these items may require customization, pending your specific tool requirements. Call for more information.



NATOLI TIP MOUNTED DUST CUPS

Made with pharmaceutical-grade materials to meet specific requirements for stability, wear-resistance, cleaning, and flexibility, tip mounted dust cups are used to prevent lubricant contamination and black specks. Tip mounted dust cups require cutting out a hole using the upper punch or our dust cup cutting tool, featured on the opposite page. After the hole is cut, the dust cup will automatically secure to the upper punch tip.

ORIGINAL DUST CUPS

Tip Mounted (Clear)		
Part No.	Type	Outside Dia.
SU 2501	BB, B	1.000" (25.4 mm)
SU 2502	B, D	1.212" (30.79 mm)
SU 2503	D	1.349" (34.27 mm)
SU 2504	DS3	1.748" (44.4 mm)



Tip Mounted (Orange)		
Part No.	Type	Outside Dia.
SU 2496	BB, B	1.000" (25.4 mm)
SU 2497	B,D	1.212" (30.79 mm)
SU 2498	D	1.349" (34.27 mm)
SU 2499	DS3	1.748" (44.4 mm)



Tip Mounted (Red)		
Part No.	Type	Outside Dia.
SU 2501AR	BB, B	1.000" (25.4 mm)
SU 2502AR	B,D	1.212" (30.79 mm)



SILICONE DUST CUPS

Tip Mounted (Clear)		
Part No.	Type	Outside Dia.
SU 2601	BB, B	1.000" (25.4 mm)
SU 2602	B, D	1.212" (30.79 mm)
SU 2603	D	1.349" (34.27 mm)



Tip Mounted (Blue)		
Part No.	Type	Outside Dia.
SU 2601B	BB, B	1.000" (25.4 mm)
SU 2602B	B,D	1.212" (30.79 mm)
SU 2603B	D	1.349" (34.27 mm)



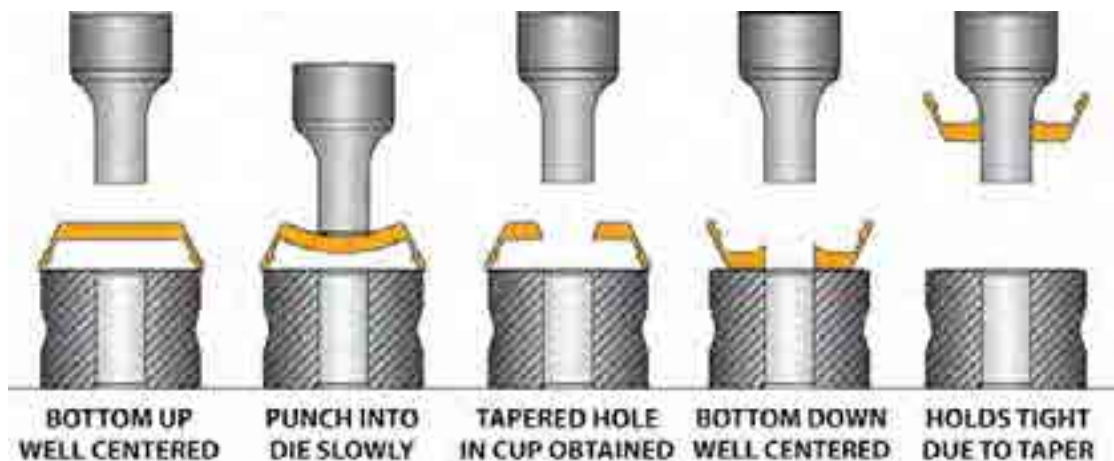
Tip Mounted (Red)		
Part No.	Type	Outside Dia.
SU 2601R	BB, B	1.000" (25.4 mm)
SU 2602R	B,D	1.212" (30.79 mm)
SU 2603R	D	1.349" (34.27 mm)



Tip Mounted (Metal Detectable)		
Part No.	Type	Outside Dia.
SU 2601MD	BB, B	1.000" (25.4 mm)
SU 2602MD	B,D	1.212" (30.79 mm)
SU 2603MD	D	1.349" (34.27 mm)



Standard Dust Cup Installation Instructions



NEW STYLE DUST CUPS

NEW STYLE DUST CUPS ARE SUGGESTED FOR USE WITH SEGMENTED TURRETS AND IN SITUATIONS WHERE THERE ARE CLEARANCE ISSUES.

Tip Mounted (Opaque)

Part No.	Type	Outside Dia.
SU 2802	B	1.000" (25.4 mm)
SU 2803	D, 533/328-45	1.250" (31.75 mm)
SU 2804	533/328-33	1.750" (44.45 mm)



Tip Mounted (Orange)

Part No.	Type	Outside Dia.
SU 2802O	B	1.000" (25.4 mm)
SU 2803O	D, 533/328-45	1.250" (31.75 mm)
SU 2804O	533/328-33	1.750" (44.45 mm)



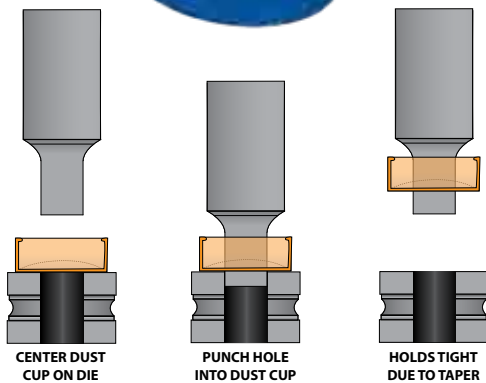
Tip Mounted (Blue)

Part No.	Type	Outside Dia.
SU 2802B	B	1.000" (25.4 mm)
SU 2803B	D, 533/328-45	1.250" (31.75 mm)
SU 2804B	533/328-33	1.750" (44.45 mm)



Tip Mounted (Red)

Part No.	Type	Outside Dia.
SU 2802R	B	1.000" (25.4 mm)
SU 2803R	D, 533/328-45	1.250" (31.75 mm)
SU 2804R	533/328-33	1.750" (44.45 mm)



New Style Dust Cup Installation Instructions

DUST CUP CUTTING TOOL

Safely and accurately punch out dust cups off-line with your production tooling.

- Easy setup in less than 30 seconds
- Bottom-up design requires less space and can be placed on almost any work surface
- Light-weight — move without additional equipment
- Acetal dust cup slides can be custom made for any shape dust cup

Part No.	Type
SU 0399	Dust Cup Cutting Tool



NATOLI BARREL-STYLE DUST CUPS

Made with pharmaceutical-grade materials to meet specific requirements for stability, wear-resistance, cleaning, and flexibility, barrel-style dust cups are used to prevent lubricant contamination and black specks. Barrel-Style Dust Cups come with pre-cut holes and fit directly on the punch barrel and can be used with or without upper punch dust cup grooves.

ORIGINAL BARREL-STYLE DUST CUPS

Barrel-Style (Opaque)		
Part No.	Type	Outside Dia.
SU 2506	B	1.078" (27.38 mm)
SU 2507	D	1.4375" (36.51 mm)
SU 2812	B	1" (25.4 mm)
SU 2813	D	1.250" (31.75 mm)



Barrel-Style (Orange)		
Part No.	Type	Outside Dia.
SU 2493	B	1.078" (27.38 mm)
SU 2494	D	1.4375" (36.51 mm)
SU 2812O	B	1" (25.4 mm)
SU 2813O	D	1.250" (31.75 mm)



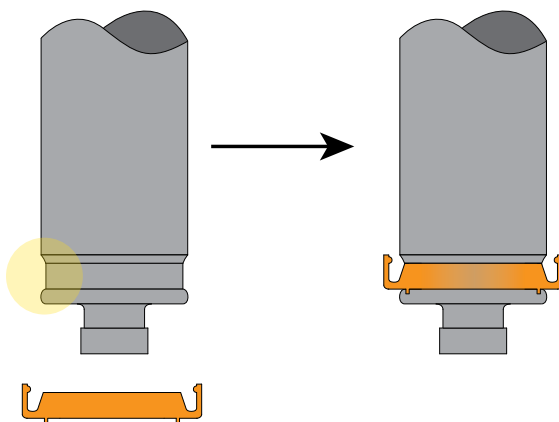
Barrel-Style (Blue)		
Part No.	Type	Outside Dia.
SU 2812B	B	1" (25.4 mm)
SU 2813B	D	1.250" (31.75 mm)



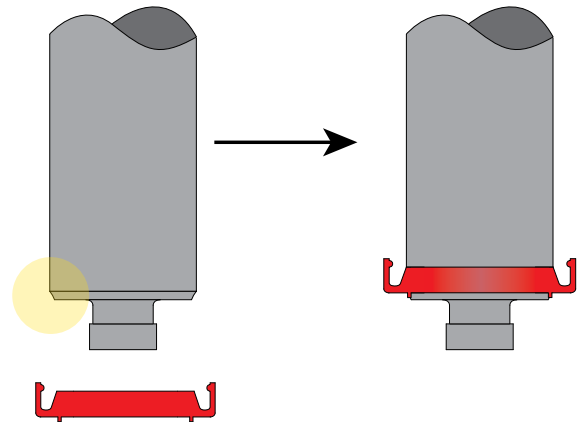
Barrel-Style (Red)		
Part No.	Type	Outside Dia.
SU 2812R	B	1" (25.4 mm)
SU 2813R	D	1.250" (31.75 mm)



Barrel-Style Dust Cup Installation Instructions



WITH GROOVE



WITHOUT GROOVE

SILICONE BARREL-STYLE DUST CUPS

Silicone generally has a longer life and can be cleaned in higher temperatures if required.

Barrel-Style Silicone (Clear)		
Part No.	Type	Outside Dia.
SU 2612	B	1.078" (27.38 mm)
SU 2613	D	1.4375" (36.51 mm)
SU 2605	FS12	0.700" (17.78 mm)



Barrel-Style Silicone (Orange)		
Part No.	Type	Outside Dia.
SU 2612O	B	1.078" (27.3812 mm)
SU 2613O	D	1.4375" (36.51 mm)
SU 2605O	FS12	0.700" (17.78 mm)



Barrel-Style Silicone (Blue)		
Part No.	Type	Outside Dia.
SU 2612B	B	1.078" (27.3812 mm)
SU 2613B	D	1.4375" (36.5125 mm)
SU 2605B	FS12	0.700" (17.78 mm)



Barrel-Style Silicone (Red)		
Part No.	Type	Outside Dia.
SU 2612R	B	1.078" (27.3812 mm)
SU 2613R	D	1.4375" (36.51 mm)
SU 2605R	FS12	0.700" (17.78 mm)



Barrel-Style (Metal Detectable)		
Part No.	Type	Outside Dia.
SU 2612MD	B	1.078" (27.3812 mm)
SU 2613MD	D	1.4375" (36.51 mm)
SU 2605MD	FS12	0.700" (17.78 mm)



Metal detectable dust cups and bellows alert operators should part become separated from tool during production.

NATOLI SILICONE BELLOWS

For use on upper punches with a bellows groove, silicone bellows eliminate dust on punch barrels, reducing friction and enhancing lubrication performance.

Natoli Silicone Bellows	
Part No.	Type
SU 2511	B
SU 2513	D
SU 2511-S	Firm Type
SU 2513-S	Firm Type
SU 2511MD	Metal Detectable
SU 2513MD	Metal Detectable



DRUM-STYLE DEDUSTER

Maximum Throughput = 3,000,000 TPH

Features:

- Acrylic glass housing
- Dedusting and deburring capabilities
- Adjustable vibration
- Tool-less assembly/disassembly
- Low maintenance
- GMP Compliant

Dimensions:

- Required Floor Area: Ø 12.4" (315 mm)
- Adjustable Overall Height (with stand): 35.8-39.2" (910-995 mm)
- Adjustable Inlet Height (with stand): 27.6-35.8" (700-910 mm)

Specifications:

- Downward Conveying Range: 12" (300 mm)
- Conveying of Tablets/Capsules: 0.20-1" (5-25 mm) dia.
- Power Supply: 110v or 230v, 50/60 Hz

Part No.	Item Description	Max. TPH
SU 2790	Standard Drum-Style Deduster	3,000,000 (5 x 2 mm tablets)



KRAEMER TELESCOPIC DEDUSTER

Maximum Throughput = 3,500,000 TPH

This telescopic tablet deduster has improved dedusting and deburring capabilities thanks to an optimized combination of vibration, dust agitation, and air/vacuum suction. It is also equipped with an acceleration sensor that assures constant vibration, independent of the load or the amount of tablets in the deduster.

Features:

- Dedusting and deburring capabilities
- Tool-less assembly and disassembly
- Acceleration sensor
- Vibration-free housing
- GMP Compliant

Specifications:

- Outlet Height: 39-49" (990-1235 mm)
- Inlet Height: 28-38" (715-960 mm)
- Upward Conveying Range of 10-20" (250-500 mm)
- Conveying of Tablets/Capsules of 0.12-1" (3-25 mm) dia.
- Power Supply: 100-240v, 50/60 Hz

Exterior Dimensions (L x W x H):

22" x 22" x 56" (563 x 563 x 1425 mm) - *Adjustable Height*

Part No.	Item Description	Max. TPH
SU 2794	Telescopic Tablet Deduster	3,500,000 (4.8 x 2.3 mm tablets)



UPHILL TABLET DEDUSTER

Maximum Throughput = 1,000,000 TPH

This deduster performs elevating and dedusting processes simultaneously. Ultra high-speed, it is well suited for pharmaceutical, nutraceutical, chemical, foodstuff and related applications.

Features:

- High-quality, stainless steel construction
- Variable speed control
- Long dedusting path
- Automatic polishing of all sides/angles

Specifications:

- Deduster Distance: 20.3' (6.0 m)
- Maximum Tablet Diameter: 1" (25 mm)
- Feeding Height: 33 - 39" (835 - 985 mm)
- Adjustable Chute: 42 - 48" (1070 - 1220 mm)
- Clean Compressed Air: 0.1 m³/min 0.05MPa
- Vacuum: 2.7m³/min -0.1MPa
- Power Supply: 110v or 220v, 50 Hz

Exterior Dimensions (L x W x H):

20 x 22 x 53" (500 x 550 x 1350 mm)

Part No.	Item Description	Voltage	Max. TPH
SU 2894	Uphill Tablet Deduster	110	1,000,000 (8 mm tablets)
SU 2895	Uphill Tablet Deduster	220	1,000,000 (8 mm tablets)



STAINLESS STEEL TABLET DEDUSTER

Maximum Throughput = 180,000 TPH

Mirror-polished 304 stainless steel with adjustable base, variable speed vibrator and an adjustable inlet funnel, along with washdown motor and controls.

Features:

- Vibrator and controls are built to NEMA, washdown specifications
- All mirror-polished Stainless Steel contact parts and exterior covers
- Adjustable tilt feature, when set in relation to vibration intensity, determines speed of tablets
- GMP designs and construction
- Quick disconnect clear Lexan® top cover
- Stainless Steel support column
- Stainless Steel vacuum nozzle for dust control
- 5 leg polished aluminum base with locking casters

Specifications:

- Electrical: 110v, 1ph, 60 Hz
- Air: 1 to 2 C.F.M. (.03 to .06 C.M.M.)
- Vacuum: 20 to 30 C.F.M. (.6 to .9 C.M.M.)
- Net Weight: 36 lbs. (16.3 kg)
- Shipping Weight: 50 lbs. (22.7 kg)
- Product Contact Parts: 304 Stainless Steel

Part No.	Item Description	Voltage	Max. TPH
SU 2893	Standard Electric	110	180,000



Replacement parts available

NILFISK INDUSTRIAL VACUUMS FOR DUST CONTAINMENT

Safely collect and contain dust created in the tablet compression process. Maintain product integrity and press performance with industrial-powered dust containment provided by a GMP compliant vacuum.

SU 2900 Features:

- Easy filter cleaning with PullClean technology while vacuum is running
- GMP compliant design
- All 304 Stainless Steel construction
- Downstream HEPA filter standard
- Sold with antistatic hose, cuff and inlet coupler
- 220v / 150 CFM / 88" waterlift / 6.6 gal capacity / Quiet 64 dB(A)

SU 2901 Features:

- InfiniClean™ automatic filter cleaning system cleans the filter without human interaction
- GMP compliant design
- All 304 Stainless Steel construction
- Downstream HEPA filter standard
- Sold with antistatic hose, cuff and inlet coupl
- 220v / 150 CFM / 88" waterlift / 6.6 gal collection / Quiet 64 dB(A)

Part No.	Item Description
SU 2900	Nilfisk Industrial Vacuum
SU 2901	Nilfisk Infiniclean Industrial Vacuum



SU 2900 shown

LOCK INSIGHT PH PHARMACEUTICAL METAL DETECTOR

The LOCK INSIGHT PH Metal Detector was made for the pharmaceutical industry. Innovative features provide superior quality-assurance while meeting GMP standards.

Maximum Throughput:

- 30,000 TPM or 1,800,000 TPH

Electronic Features:

- Fail-safe operating mode
- Color touchscreen with 200 product pre-sets
- External USB and other communication methods
- Direct digital signal vector diagram display
- Four password protected security levels
- IQ, OQ, PQ Validation documents and certification included

Physical Features:

- Compact footprint
- Adjustable height/head angle
- Easy clean, hygienic design

Compliances:

- 21 CFR Part 210
- 21 CFR Part 211
- 21 CFR Part 11
- NEMA 4X/IP66

Power Requirements:

- 110-250v AC
- 50/60 Hz

Part No.	Item Description
LE 0323	LOCK INSIGHT PH Metal Detector



KRAEMER COMBINED UNIT (Tablet Deduster + Metal Detector)

Maximum Throughput = 3,500,000 TPH

This tablet deduster and metal detector saves valuable production time by combining two steps into one. These machines may be used on either side of a tablet press or capsule filling facility.

Metal Detector Features:

- 21CFR part 11 compliant
- Fail-safe operation mode
- Waterproof and dust tight
- Functions with gravity
- Four safety levels
- Battery driven permanent storage
- 100-product memory

Tablet Deduster Features:

- cGMP compliant
- Upward vibratory conveying
- Conveying range of 250-500 mm
- Integrated acceleration sensor
- Large viewing window
- No tools required

Dimensions (L x W x H):

32.7" x 22.6" x 56"
(830 x 575 x 1425 mm)

Part No.	Deduster	Metal Detector	Aperture Diameter
SU 2693	Kraemer KD6015	Safeline Table x 2	95 x 38 mm
SU 2697	Kraemer KD6015	with Lock	95 x 38 mm
SU 2698	Kraemer KD6015	with Ceia Metal Detector	95 x 38 mm



INFRARED LASER THERMOMETER

A non-contact infrared laser thermometer is critical for quickly obtaining the temperature of punches and tablets. Use to determine the temperature zone where tablets may start to film and/or stick to the punch face. This type of thermometer is highly recommended for troubleshooting and discovering the heat limits of sensitive products. It also accurately monitors tablet press cam and roller temperatures.

Handheld, non-contact laser thermometers are compact, rugged and easy to use. Simply aim, pull the trigger, and in less than one second the temperature is displayed in °F or °C. Recorded data can be stored in a log for future reference. *2 AAA batteries included.*

Features:

- Circle laser for better targeting
- High quality 12:1 optics
- IR range to 1022°F (550°C)
- Reads type K probes
- Adjustable emissivity
- Max/Min, C/F, Avg, Alarm

Part No.	Item Description	Temp Range	Accuracy
SU 0370	Infrared Laser Thermometer	-58 – 1022°F (-50 – 550°C)	±1.8°F (±1.0°C)*

*Accuracy can be affected by the emissivity setting, target spot size, and rapid changes in ambient temperature.



An infrared thermometer in use

NP-RD10/RD10A LAB PRESS

Ideal for R&D environments, the NP-RD10 and NP-RD10A bench-top tablet presses are perfect for pharmaceutical laboratory settings. Capable of multi-layered tableting, each press permits independent control of both tablet hardness and weights to meet tablet production requirements and specifications.

Using the NP-RD10/10A can help maintain tablet uniformity, decrease formulation waste and reduce time to production.

Please contact a Natoli representative for more information.

Features:

- 10 U.S./10 metric ton capacity
- ½" thick Lexan® guards serve as safety shields
- Programmable parameters for compression force control and automatic cycle return
- Tablet ejector lever easily ejects tablet, eliminating the need for disassembly
- Micro-adjustable depth of fill provides extremely accurate layer weight control
- Electro-less nickel coated frame reflects rugged construction
- Uses standard TSM or EU "B", "D" and "F" tool configurations
- Eliminates the handling of multiple tool parts to compress a single tablet
- CE compliant

Part No.	Description
NP-RD10	Manual Lab Press
NP-RD10A	Automatic Lab Press



NP-RD20 LAB PRESS

An automated, single-station laboratory press, the NP-RD20 provides new opportunities for pharmaceutical laboratory research and development. This mobile press allows the operator to program aspects of tablet production including precompression parameters and dwell time on a color touchscreen display. It produces product in small quantities, reducing formulation waste.

The NP-RD20 also has data acquisition capabilities that can be used to collect and track test results, including compression curve and elasticity in single, bi-layer, and multi-layer tablets.

Please contact a Natoli representative for more information.

Features:

- 4¾ ton/42 kN capacity
- CE Compliant
- ½" thick Lexan® guards serve as safety shields
- Quick tooling changeover
- Programmable compression aspects
- Electro-less nickel coated frame reflects rugged construction
- Uses standard TSM or EU "B", "D" and "F" tool configurations
- Eliminates the handling of multiple tool parts to compress a single tablet
- Optional feeder system

Part No.	Description
NP-RD20	Automatic Lab Press



PRECISION BALANCE

A large 4.7" \varnothing / 120 mm \varnothing weighing pan, brilliant oversized display, and intuitive operation make this durable digital balance easy to use. With a readability of only 0.001 gram and a capacity of 220 grams, this balance is your ideal choice for balance-related needs.

Features:

- 10 Weighing units, plus custom setting
- Simple user-friendly operation
- Sealed keypad protects against dirt and accidental spills
- Multilingual display
- Large backlit LCD display with 0.8" / 20 mm-high digits
- Large grade 304 stainless steel pan
- RS-232 and USB Interfaces for computers and printers
- Zero-tracking feature ensures display returns to zero reading
- Level indicator and non-slip adjustable leveling feet
- Splash proof to protect from accidental spills
- Round 180 mm \varnothing x 110 mm removable draft shield
- Printouts include date and time for data tracking within Good Laboratory Practices (GLP) guidelines
- IQ/OQ Documents Included
- External calibration

Dimensions (W x D x H):

8.7" x 12.2" x 10.6" (20 x 310 x 270 mm)

Applications:

- Weighing
- Net / Total
- Check weighing
- Percentage weighing
- Weight accumulation
- Parts counting
- Density determination
- Below balance weighing

Part No.	Item Description
LE 0595	Precision Balance



ANALYTICAL BALANCE

This analytical balance features motorized internal calibration with the option to calibrate with external calibration weight and a draft shield for accurate readings. In addition to its 120 gram maximum weighing capacity and 0.0001 gram readability, this analytical balance features a glass-weighing chamber and a 3.5 inch weighing pan.

Features:

- 16+ Weighing units
- Simple, user-friendly operation
- Multilingual display
- Large backlit LCD display with 0.8"/ 20 mm-high digits
- Large stainless steel pan
- Solid metal housing
- Non-slip adjustable leveling feet
- Splash proof to protect from accidental spills
- RS-232 and USB Interface
- External calibration

Applications:

- Weighing
- Net / Total
- Check weighing
- Percentage weighing
- Weight accumulation
- Parts counting
- Density determination
- Below balance weighing

Part No.	Item Description
LE 0591	Analytical Balance

Dimensions (W x D x H):

8.7" x 13.4" x 13.5" (220 x 340 x 344 mm)



MANUAL 3-IN-1 TABTEST STAINLESS STEEL TABLET HARDNESS & THICKNESS TESTER

An economical, simple-to-use machine that accurately calculates the hardness, thickness diameter, and length of solid dosage forms.



Features:

- Touch screen display
- Capable of up to 250 samples per test
- Electronic load-cell
- Adjustable break between samples
- Constant force and constant speed measuring principles available as standard
- Programmable calibration and verification modes
- Auto/Manual mode with programmable time delay
- Printing (serial/ethernet) for data and graph selectable - RS232 Serial

Specifications:

Range: 10-500N

Accuracy: $\pm 1N$

Diameter/Thickness: ± 0.02 mm

Hardness: $\pm 1N$

Units: N, Kp, Sc

Part No.	Item Description
LE 0642	Tabletop Hardness Tester
LE 0624	Printer
LE 0647	Calibration/Validation Kit



FRIABILITY TESTER

The unique design of this friability tester allows the two drums to be loaded simultaneously without removing them from their axis. At the end of the test, samples are automatically discharged into individual trays, and the drum automatically positions itself for reloading.

Features:

- Programmable counter/timer
- Two modes - time and revolution count
- RPM and count validation
- IQ/OQ Documents Included
- 10° tilt capability (Optional)

Specifications:

Speed: 25 RPM
Accuracy: ± 1 RPM
Number of Drums: 2-front loading

Dimensions (W x D) Base Footprint:

13.8" x 12.2" (35 x 40 cm)

Part No.	Item Description
LE 0631	Dual-Drum Fixed-Speed Friability Tester



DUAL-STATION DISINTEGRATION TESTER

This cost-effective unit tests the disintegration time of tablets, capsules and other solid dosage forms – with two operation modes for A and B baskets.

Timer Mode - Individual test time is programmed for each basket. At the set time, the basket parks out of the media for better observation of the disintegrating tablet.

Registration Mode - Disintegration time is recorded for each sample by pressing the respective color coded key. Time is displayed on the instrument panel and can be printed out. Upon completion of all test samples, the basket will park out of the beaker.

Features:

- USP/EP Compliant
- Dual station with individual drive and timer
- Thermostat Safety Control
- RS232 and Parallel Printer Interface
- Alpha Numeric Keyboard

Specifications:

Stroke Rate: 30 ± 1 stroke/minute
Stroke Height: 2" ± 0.08 " (55 mm ± 1 mm)
Temperature: 86°F to 104°F, $\pm 0.3^\circ\text{F}$
(25°C to 45°C, $\pm 0.3^\circ\text{C}$)
Power: 230 VAC, 50/60 Hz

Dimensions (H x W x D):

22.4" x 14.6" x 14.2" (570 x 372 x 360 mm)

Part No.	Item Description
LE 0639	Semi Auto Dual-Station Disintegration Tester
LE 0624	Printer



QUALITY.

NATOLI leads the industry in tablet compression tooling.



At Natoli Engineering Co., we're proud to engineer punches and dies of superior quality. We use the highest quality steel paired with the latest manufacturing innovations, and all of our materials are tested for quality by our in-house metallurgist and an independent lab. Can your tooling supplier document steel quality like Natoli can? Find out at natoli.com.



TOOLGUARD: TOOLING MAINTENANCE PROGRAM

CLEANING : BASIC (LEVEL 1)

This economical kit is great for any cleaning room, and any budget—a definite **must have!**

Part No.	Item Description
MA 8030	Level 1 Cleaning Kit



Our Basic Cleaning Kit provides essential wiping cloths, handling trays, and cleaning and storage agents to help keep your tools in good working shape. This is a hands-on cleaning option every tablet manufacturer should incorporate.

Kit Includes:

- A. Spray Bottle: 16 oz., (2)
- B. Lint-Free Wiping Cloths
- C. Punch Holding Strips (2)
- D. Pharma-Kleen One-Step Rust/Corrosion Preventative Cleaner
- E. Acetal Wash Basin*
- F. 6" Phenolic Embossing Picks (6)
- G. Stainless Steel Punch Basket: "B"
- H. Stainless Steel Die Basket: "B"
- I. Stainless Steel Punch Basket: "D"
- J. Stainless Steel Die Basket: "D"
- K. Variable Temperature Heat Gun
- L. Protectant Facemask
- M. Soft-Tip Nylon Brushes (6)
- N. H-1 Food Grade Tooling Storage Protectant
- O. Tooling Storage Boxes (2)*

*not shown

Request a brochure for additional information on our maintenance kits!



TOOLGUARD: TOOLING MAINTENANCE PROGRAM

CLEANING : ADVANCED (LEVEL 2)

Using ultrasonic cleaning is a huge time saver, cutting labor costs and ensuring a consistent quality clean.

Part No.	Item Description
MA 8031	Level 2 Cleaning Kit

The Advanced Cleaning Kit is an introduction into ultrasonic cleaning and includes our Tabletop Ultrasonic Cleaning Unit, recommended wash solution, and other items needed to clean tools before inspecting, polishing or storing.

Kit Includes:

- A. Spray Bottle: 16 oz. (2)
- B. Stainless Steel Tray w/Handles: "B" punches and dies
- C. Stainless Steel Tray w/Handles: "D" punches and dies
- D. 12 Replacement Tips for Stainless Steel Tray*
- E. Lint-Free Wiping Cloths
- F. Natoli Alkaline Wash Solution
- G. Tabletop Ultrasonic Cleaner
- H. Tabletop Ultrasonic Cleaner Basket
- I. 6" Phenolic Embossing Picks (6)
- J. Variable Temperature Heat Gun
- K. Protectant Facemask*
- L. Soft-Tip Nylon Brushes (6)
- M. H-1 Food Grade Tooling Protectant
- N. Pharma-Kleen One-Step Rust/Corrosion Preventative Cleaner*
- O. Tooling Storage Boxes (2)*

*not shown

Request a brochure for additional information on our maintenance kits!



TOOLGUARD: TOOLING MAINTENANCE PROGRAM

CLEANING : ULTIMATE (LEVEL 3)

Our Stainless Steel 3-Piece Ultrasonic Cleaning System with Wash, Rinse and Dryer units, saves time and money when preparing tools for inspection, polishing, or storing.

Part No.	Item Description
MA 8033	Level 3 Cleaning Kit

Our Ultimate Cleaning Kit is a premium ultrasonic cleaning package. Wash, rinse and dryer units remove the most stubborn grime and product residue — and give the best return on investment. The kit includes recommended cleaning agents, basic safety and premium handling equipment needed for fast and efficient cleaning.

Kit Includes:

- A. Spray Bottle: 16 oz. (2)
- B. Stainless Steel Tray w/Handles: “B” punches and dies
- C. Stainless Steel Tray w/Handles: “D” punches and dies
- D. 12 Replacement Tips for Stainless Steel Tray
- E. Lint-Free Wiping Cloths
- F. Natoli Alkaline Wash Solution
- G. Chem-Crest 77G Rinse Additive and Corrosion Inhibitor
- H. 6” Phenolic Embossing Picks (6)
- I. Stainless Steel Ultrasonic Wash Unit
- J. Stainless Steel Ultrasonic Rinse Unit*
- K. Stainless Steel Ultrasonic Drying Unit*
- L. Protectant Facemask
- M. Soft-Tip Nylon Brushes (6)
- N. H-1 Food Grade Tooling Storage Protectant
- O. Pharma-Kleen One-Step Rust/Corrosion Preventative Cleaner*
- P. Tooling Storage Boxes (2)*

I. Stainless Steel Ultrasonic Wash Unit



Request a brochure for additional information on our maintenance kits!

STAINLESS STEEL 3-PIECE ULTRASONIC CLEANING SYSTEM

An effective routine cleaning program is crucial to maximizing the longevity of tablet compression tooling. Natoli's custom Stainless Steel 3-piece Ultrasonic Cleaning System provides a user-friendly, cost-effective, and safe cleaning solution. The convenient side-by-side design makes transferring punches and dies quick and easy, reducing the risk of tool damage during handling. **Units are CE approved.**



Features:

- Space-saving bi-fold tank covers
- Easy access front controls
- Adjustable thermostats with digital display
- Automatic Dryer shut-off
- Illuminating runtime cycle switch
- All stainless steel construction with adjustable legs
- Meets all FCC regulations

Dimensions (W x D x H):

Overall: 32" x 30" x 34.75" (812.8 x 762 x 882.65 mm)
Each Tank: 24" x 16" x 14" (609.6 x 406.4 x 355.6 mm)

Part No.	Item Description	Power Requirements
MA 7640	3-Piece Ultrasonic Cleaning System	240v
Replacement Items		
Part No.	Item Description	Power Requirements
MA 7643	Ultrasonic Wash Unit with filtration	240v/60 Hz/1 Phase/15 Amps
MA 7641	Ultrasonic Rinse Unit	240v/60 Hz/1 Phase/10 Amps
MA 7642	Ultrasonic Drying Unit	240v/60 Hz/1 Phase/18 Amps



BEFORE



AFTER

Optional Chem-Crest® Chemicals

Part No.	Item Description
MA 6023	Chem-Crest 25 General Purpose Cleaning Additive (1 Gallon / 3.8 L)
MA 6036	Chem-Crest 77G Rinse Additive and Corrosion Inhibitor (1 Gallon / 3.8 L)
MA 6024	Chem-Crest 211 Multi-Purpose Cleaning Additive (1 Gallon / 3.8 L)
MA 6026	Natoli Wash Solution

Optional Accessories

Part No.	Item Description
MA 5082	Stainless Steel Punch Tray for "B" Tooling
MA 5084	Stainless Steel Punch Tray for "D" Tooling
MA 5087	Stainless Steel Punch Tray for FS12 Tooling
MA 5184	"B" Tray for Tooling Storage Box
MA 5186	"D" Tray for Tooling Storage Box



MA 5186 with MA 5187



Wash unit requires less water than manual cleaning



Drying unit blows air into punch cups



Drying wand blows hot air directly into punch heads and vented caps



Punches and dies in rinse unit

TABLETOP ULTRASONIC CLEANING UNIT

Tabletop Ultrasonic Units provide an effective and efficient method for cleaning compression tooling and parts by delivering alternating phases of low and high pressure to ensure uniform cleaning. Tabletop units are available with either a digital or analog timer. *Units are CE compliant.*



Features:

- 7 gallon (26.1L) tank capacity
- All models are ETL/CSA approved
- All models include a cover and basket
- Analog models have a timer and adjustable thermostatically controlled heater
- Digital models precisely control time, heat, and power
- Exterior Dimensions: 21" x 12.75" x 14.5" (533 x 324 x 368 mm)
- Tank Dimensions: 19.5" x 11.75" x 8" (495 x 299 x 203 mm)



Digital Units

Part No.	Item Description	Voltage
MA 6100	Digital Ultrasonic Tabletop Unit	115
MA 6101	Digital Ultrasonic Tabletop Unit	230

Analog Units

Part No.	Item Description	Voltage
MA 6102	Analog Ultrasonic Tabletop Unit	115
MA 6103	Analog Ultrasonic Tabletop Unit	230

PHARMA-KLEEN

One-Step Rust and Corrosion Preventative, Cleaner and Lubricant. Ideal for turrets, punches, sockets, cam tracks, compression rolls, and scrapers, as well as preventing rust when storing parts.

- Specially formulated for use on tablet presses, capsule machines, and other equipment
- Cleans and lubricates in one step without water
- Leaves an ultra-thin, highly-protective film that guards against rust and corrosion
- Reduces down-time between batches



Part No. Item Description

MA 6032	Pharma-Kleen One-Step 1 Gallon (3.8 L)
---------	--

DIGITAL IMMERSION THERMOMETER

Prevent damage and discoloration of tooling by testing the water temperature in ultrasonic cleaning units before every use. For optimum cleaning conditions, use a water temperature of 115 – 125°F.

Never exceed 150°F.

- -40 to 302°F (-40 to 150°C)
- Accuracy of ± 1.8°F (± 1°C)
- 6-second response
- Rubberized switch panel

Part No. Item Description

MA 5112	Digital Immersion Thermometer
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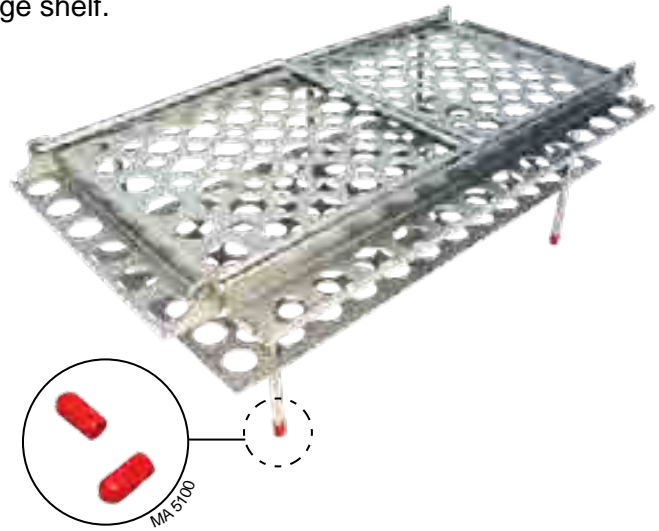
STAINLESS STEEL TOOLING TRAYS

Save time, reduce handling and prevent tool damage with the Natoli Stainless Steel Tooling Tray. Perfect for use with Natoli's 3-piece Ultrasonic Cleaning System, the tray is designed with folding handles, rubber-tipped legs and can be used in **all** cleaning units. The tray provides secure handling of punches and dies from the tablet press to the cleaning system to the storage shelf.

Exterior Dimensions (L x W x H):

17" x 10" x 5" (432 x 254 x 127 mm)

Part No.	Item Description
MA 5082	Tray for "B" Tooling 72 "B" (3/4") Punches + 38 "B" (1.187") Dies or 72 "B" (3/4") Punches + 48 "BB" (0.945") Dies
MA 5084	Tray for "D" Tooling 48 "D" (1") Punches + 24 "D" (1.500") Dies
MA 5087	Tray for "FS12" Tooling - 72 Punches
Replacement Items	
Part No.	Item Description
MA 5100	Replacement Tips for Punch Tray

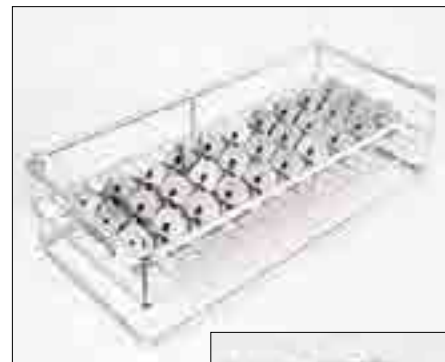


STAINLESS STEEL WIRE BASKETS

Individual punch and die baskets are ideal for use in ultrasonic washing, rinsing, and drying units.

- Sturdy, stainless steel construction
- Economical

Optional Accessories	
Part No.	Item Description
MA 7533	316L Stainless Steel Punch Basket for "B" Tooling (holds 55 Punches)
MA 7534	316L Stainless Steel Die Basket for "B" Tooling (holds 50 Dies)
MA 7535	316L Stainless Steel Punch Basket for "D" Tooling (holds 36 Punches)
MA 7536	316L Stainless Steel Die Basket for "D" Tooling (holds 36 Dies)



PROTECTANT FACEMASK

With a clear polycarbonate face shield, this mask provides comprehensive eye and face protection even in the most demanding work environments. The turn-lock knob conveniently tightens/loosens the headgear while being worn to provide maximum comfort and safety.



Part No.	Item Description
MA 9010	Protectant Facemask

130°-930° F HEAT GUN

This 120v/1200w heat gun provides a temperature range of 130° to 930° F. The push button variable temperature control and 2-speed motor makes this heat gun ideal for fast and efficient tool drying.



Part No.	Item Description
MA 9000	130° - 930° F Heat Gun

ACETAL WASH BASIN

Keep your tools safe and secure during cleaning with this durable and stable acetal wash basin. The tray features 15 deep channels to hold tools in place during the cleaning process. This incredibly tough thermoplastic is highly resistant to solvents and chemicals, has low moisture sensitivity, and excellent fatigue-life to assist with cleaning for years to come.

- Outside dimensions (24 3/8"L x 10"W)
- Inside dimension (23 3/8"L x 9" W)

Part No.	Item Description
MA 6250	Acetal Wash Basin



SOFT-TIP NYLON BRUSH

Acetal handle and nylon bristles are great for safely and easily removing product from punch cups. Ideal for tooling maintenance and preservation.



Part No.	Item Description
SU 0500	Soft-Tip Nylon Brush

16 OZ. 2-PACK SPRAY BOTTLE

Nozzle adjusts from mist to steady stream and helps provide a more accurate flow control.

Perfect for use with H-1 Tooling Storage Protectant (See page 88) and/or Pharma-Kleen. (See page 46)



Part No.	Item Description
MA 3000	16 oz. 2/Pack Spray Bottle

FOOD GRADE DEGREASER

Remove grease with ease using this VOC-Free degreaser. Ideal for use on punch heads and cam tracks.

- Faster Evaporation
- VOC Free
- Convenient 1 pint can



Part No.	Item Description
SU 2543	Degreaser, Faster Evap. - VOC-Free; 1 Pint

CHEM-CREST® 25

An aqueous, general purpose, heavy-duty, biodegradable, non-ammoniated alkaline cleaner for use in Ultrasonic Cleaning Systems.

- Rapidly and effectively removes light oils, greases, fingerprints, particulates and more
- Safe on aluminum, magnesium, stainless steel, glass, plastics, ceramics, copper and brass

Part No.	Item Description
MA 6023	CHEM-CREST® 25 1 Gallon (3.8 L) Concentrate

**CHEM-CREST® 211**

A multi-purpose, heavy-duty, biodegradable, phosphate-free, concentrated alkaline cleaner for use in Ultrasonic Cleaning Systems.

- Rapidly and effectively remove contaminants, heavy oils, greases, fingerprints, lubricants, ceramic dust, light buffing and lapping compounds, light silicone oils and ink
- Safe on cast-iron, steel, brass, aluminum, copper, beryllium, stainless steel, glass, plastics and ceramics

Part No.	Item Description
MA 6024	CHEM-CREST® 211 1 Gallon (3.8 L) Concentrate

**CHEM-CREST® 77G**

This rinse additive provides protection from rust and corrosion during rinsing and air drying applications.

- Ideal for cleaning tooling prior to long-term storage
- **Do not use on aluminum or zinc**

Part No.	Item Description
MA 6036	CHEM-CREST® 77G 1 Gallon (3.8 L) Concentrate

**NATOLI ALKALINE WASH SOLUTION**

Ultrasonic liquid detergent concentrate used for the removal of oils, greases, carbon residues, various oxides, particulate matter, and various other contaminants from steels, ceramics, glasses, and other compatible materials. Use as a stand-alone cleaner, or as an alkaline wash solution booster.

- USDA Category A1
- **Ideal for cleaning tooling**

Part No.	Item Description
MA 6026	Alkaline Wash Solution 1 Gallon (3.8 L) Concentrate



BRANSON GP

This biodegradable, alkaline cleaner easily removes general soils, fingerprints, dust, packaging particulates, light oils and greases.



Part No.	Item Description
MA 6031	Branson GP ¼ Gallon (1 L) Concentrate

CITRUS DEGREASER Green Choice

A multi-purpose, orange-scented, concentrated citrus degreaser, capable of removing the most stubborn stains and spills.

- Recommended for ALL applications **below the compression zone**
- USDA approved for nonfood contact surfaces
- Biodegradable and environmentally safe
- Great alternative to petroleum solvents



Part No.	Item Description
SU 2535	Citrus Degreaser 16 oz. (454 g) Aerosol Can

LINT-FREE WIPING CLOTHS

Solvent-resistant, multi-purpose, heavy-duty cleaning cloths.

- Quickly absorb liquids, oils and greases
- Stays strong, even when wet



Part No.	Item Description
MA 6018	Lint-Free Wiping Cloths (140 count)

AEROSOL STAINLESS STEEL CLEANER

Specially formulated to clean, polish and protect stainless steel.

- Repels dirt, grease and fingerprints
- Recommended for use on nonfood contact surfaces
- Contains no hazardous chlorinated solvents



Part No.	Item Description
MA 6037	SS Cleaner 16 oz. (454 g) Aerosol Can

STAINLESS STEEL DRY-CLEANER

Formulated to clean, restore, and preserve stainless steel.

- Retards tarnishing, corrosion, bacteria and water stains
- Prevents discoloration, dirt accretion, streaks and finger prints
- Contains no acids, alkali or abrasives
- **NSF K1 listed for use in food industry**



Part No.	Item Description
MA 6137	SS Dry-Cleaner 16.9 oz. (479 g) Aerosol Can



Natoli Engineering supplies the tablet compression industry with an extensive variety of top-quality tablet press replacement parts for nearly every make and model of press. Natoli maintains a comprehensive inventory of replacement parts in stock and ready for immediate delivery worldwide.

We stock everything from die locks, cam tracks, and pressure rolls to turrets, feeder assemblies and more. From general needs to custom requests, Natoli quickly processes orders of all sizes and specifications.

You demand. We deliver.



TOOLGUARD: TOOLING MAINTENANCE PROGRAM

INSPECTION : BASIC (LEVEL 1)

Measure and record crucial punch and die dimensions with this entry-level inspection kit.

Part No.	Item Description
IN 5001	Level 1 Inspection Kit



The Basic Inspection Kit provides manual equipment to measure critical lengths and diameters of punches and dies. Check for tool consistency, validate remaining tooling service-life, and identify defects such as J-hooks, tip wear, damaged keys, head wear and burred edges.

Kit Includes:

- | | |
|---|-----------------------------------|
| A. Outside Digital Micrometer: 0-1" (0-25.4 mm) | K. Punch Holder: "B" |
| B. Magnetic Indicator Base | L. Punch Holder: "D" |
| C. Granite Gauge Stand | M. Lifting Lever |
| D. Dial Indicator | N. 3-Step Length Standard Gauge** |
| E. Digital Indicator | O. V-Block with Head Cut-Out |
| F. Indicator Tip: long | P. Flat Steel Plate |
| G. Digital Calipers: 6" | Q. Punch Hold Down Clamp |
| H. Punch Head Gauge: "B"*** | R. Handheld Microscope |
| I. Punch Head Gauge: "D"*** | S. Punch Holding Strips (2) |
| J. Illuminated Magnifier | |

**Calibration certification available. See part IN 7400 (pg 56)

Request a brochure for additional information on our maintenance kits!



TOOLGUARD: TOOLING MAINTENANCE PROGRAM

INSPECTION : ADVANCED (LEVEL 2)

Make automating your tooling records as easy as clicking a button.

Part No.	Item Description
IN 5003	Level 2 Inspection Kit

The Advanced Inspection Kit includes everything needed to quickly input data into the Tool Management II (TM-II) Software, making recording measurements and generating reports simple and efficient. Get exact die bore measurements, validate critical punch lengths and depths, and visually compare punch heads, tips and cups easily with the Horizontal Optical Comparator.

Kit Includes:

- | | |
|---|--|
| A. Outside Digital Micrometer: 0-1" (0-25.4 mm) | P. 3-Step Length Standard Gauge** |
| B. Straight Plug SPC Connecting Cable: 80" (2 m)* | Q. Mitutoyo Input Tool USB Hub* |
| C. Magnetic Indicator Base | R. Mitutoyo Foot Switch* |
| D. Granite Gauge Stand | S. Die Bore Gauge Stand |
| E. Dial Indicator | T. Split-Ball Bore Gauge: 0.145" - 0.290" |
| F. Digital Indicator | U. Digimatic Indicator with Absolute Encoder |
| G. Indicator Tip: long | V. Horizontal Optical Comparator |
| H. Digital Calipers: 6" | W. Machine Stand for Horizontal Optical Comparator |
| I. Punch Head Gauge: "B"*** | X. KA Counter for Horizontal Comparator |
| J. Punch Head Gauge: "D"*** | Y. V-Block with Head Cut-Out |
| K. Illuminated Magnifier | Z. Flat Steel Plate |
| L. Punch Holder: "B" type | AA. Punch Hold Down Clamp |
| M. Punch Holder: "D" type | BB. Deluxe Handheld Microscope |
| N. Tool Management II (TM-II) Software* | CC. Handheld Digital Microscope Stand |
| O. Lifting Lever | DD. Punch Holding Tray: "B" |
| | EE. Punch Holding Tray: "D" |

*not shown

**Calibration certification available. See part IN 7400 (pg 56)



TOOLGUARD: TOOLING MAINTENANCE PROGRAM

INSPECTION : ULTIMATE (LEVEL 3)

State-of-the-art laser precision tool measurements are just the start!

Part No.	Item Description
IN 5005	Level 3 Inspection Kit

Our Ultimate Inspection Kit features our industry-leading, non-contact Laser Vision System (LVS) meant to optimize workflow and reduce costly errors. Maximizing efficiency, the LVS works with the Tool Management II (TM-II) Software to efficiently measure critical punch dimensions without contact from the user. Check die bores remotely and load data through a Bluetooth connection. Get consistent measurements, faster.

Kit Includes:

- | | |
|--|---|
| A. Automatic Laser Punch Inspection System: LVS-600 | K. WiGauge Diatest Kit with M6 Assembly |
| B. "B" Reference Point Length Standard: LVS-600 with certificate, short* | L. Diatest Probe Set |
| C. "B" Reference Point Length Standard: LVS-600 with certificate, long* | M. Horizontal Optical Comparator |
| D. Magnetic Indicator Base | N. Machine Stand for Horizontal Comparator |
| E. Dial Indicator | O. KA Counter for Horizontal Optical Comparator |
| F. Digital Calipers: 6" | P. V-Block with Head Cut-Out |
| G. Punch Head Gauge: "B"*** | Q. Flat Steel Plate |
| H. Punch Head Gauge: "D"*** | R. Punch Hold-Down Clamp |
| I. Tool Management II (TM-II) Software* | S. Punch Holding Tray: "B" |
| J. Lifting Lever* | T. Punch Holding Tray: "D" |

*not shown

**Calibration certification available. See part IN 7400 (pg 56)



TABLETING SPECIFICATION MANUAL (CURRENT EDITION)

The Tableting Specification Manual (TSM) is the most valuable source of tooling information available.

Summary of Topics and Guidelines:

- Tooling terminology and specifications
- Tablet design
- Tool steel, compression forces
- Procurement, inspection and maintenance
- Troubleshooting tablet production

Part No.	Item Description
IN 7548	English
IN 7571	Spanish



CERTIFICATE OF RE-CALIBRATION

A Certificate of Re-Calibration by Natoli is available for *select* instruments listed in this section.

- Annual calibration is recommended.

Part No.	Item Description
IN 7400	Certificate of Re-Calibration



DIGITAL CALIPERS WITH ABSOLUTE ENCODER

These calipers are designed for outside or inside measurements. They feature an Absolute Encoder with special functions that allow it to remember its measuring position after being switched off.

Absolute Encoder Features:

- **Origin:** Allows setting of an origin point to be used for reference in subsequent measurements. Once set, the Absolute Encoder caliper will switch on showing its true position from the origin point rather than from 0.0000 as with standard models.
- **Zero/ABS:** Allows the display to be set to zero at any point along the slider for incremental comparison measurements. This switch will also allow return to the absolute mode and display the true position from the origin point.

Caliper Features:

- SPC port
- Inch/mm conversion
- Storage case included



USED TO MEASURE

- Overall Punch Length

Part No.	Measuring Range	Accuracy
IN 7519	0 – 6" (0 – 152 mm)	± 0.001" (± 0.025 mm)
IN 7520	0 – 12" (0 – 300 mm)	± 0.0015" (± 0.038 mm)

Use with IN 7470 cable (See page 62)

OUTSIDE MICROMETERS

Selecting the Proper Micrometer Measuring Range:

A measuring range of 0 – 1" is used for "B" and "D" punch barrels, tips and 0.945" dies.

A measuring range of 1 – 2" is used for punch barrels and tips larger than 1" and die diameters of $1\frac{3}{16}$ " and $1\frac{1}{2}$ ".

DIAL MICROMETERS

- Carbide-tipped measuring face
- Storage case included

USED TO MEASURE

- All punch diameters and tip dimensions
- Tablet thickness



Outside Dial Micrometer

Part No.	Measuring Range	Accuracy	Standard
IN 7512	0 – 1"	± 0.0001"	N/A
	0 – 25.4 mm	± 0.00254 mm	N/A
IN 7514	1 – 2"	± 0.0001"	1"
	25.4 – 50.8 mm	± 0.00254 mm	25.4 mm

IN 7512 measures BB dies, and B and D punches

IN 7514 measures B and D dies

Replacement Parts for all Micrometers

Part No.	Item Description
IN 7680	0.375" Calibration Standard
IN 7681	1.0" Calibration Standard

DIGITAL MICROMETERS WITH ABSOLUTE ENCODER

- SPC port
- Carbide-tipped measuring face
- Inch/mm conversion
- Storage case included

USED TO MEASURE

- All punch diameters and tip dimensions
- Tablet thickness

Part No.	Measuring Range	Accuracy	Standard
IN 7425	0 – 1"	± 0.00005"	N/A
	0 – 25.4 mm	± 0.00127 mm	N/A
IN 7426	1 – 2"	± 0.00005"	1"
	25.4 – 50.8 mm	± 0.00127 mm	25.4 mm

IN 7425 measures BB dies, and B and D punches

IN 7426 measures B and D dies

Use with IN 7470 cable (See page 62)



MITUTOYO® CERTIFICATE OF INSPECTION

A Certificate of Inspection is included with each Mitutoyo instrument listed in this section.

Note: May special order with Certification of Calibration if needed.

PUNCH INSPECTION

Natoli provides all the necessary items to properly check punch working length, overall length and cup depth for optimal tablet uniformity. Indicators can also be used for checking die table run out and proper setting of feed frames, which reduces granulation loss and press damage.

**MUST
HAVE**

Part No.	Item Description
IN 7501	Indicator Magnetic Base (not required with IN 7503)
IN 7503	Granite Gauge Stand (6" x 6" x 2")*
IN 7575	Punch Holder "B" Type
IN 7509	Flat Steel Plate (6" x 9")
IN 7504	Dial Indicator (Inch)
IN 7474	Dial Indicator (Metric)
IN 7508	Digital Indicator with Absolute Encoder
IN 7588	Indicator Lifting Lever
IN 7546	Digimatic Mini-Processor/Printer

**IN 7503 comes with extension pole*



HEIGHT STANDARD VALIDATION GAUGES

Confirm analog or digital indicator accuracy with Natoli calibration standards. *Custom manufactured height standards are available upon request.*

- A Certificate of Inspection is included with each standard.
- For use with validation of dial indicator

Height Standard Gauge

Part No.	Item Description
IN 7589	5.25" (133.35 mm)
IN 7648	5.26" (133.6 mm)
IN 7000	6.062" (154 mm)
IN 7001	6.250" (159 mm)

Recalibration certification available. See part IN 7400 (pg 56)



IN 7589



3-Step Validation Height Standard Gauge

Part No.	Item Description
IN 7597	5.25" 3-Step (± 0.01)
IN 7649	5.26" 3-Step (± 0.01)



IN 7597



MINI-PROCESSOR/PRINTER

The Mini-Processor features a built-in thermal line printer. Transfer data directly to a printer with an optional SPC cable or transmit data directly to a computer for storage or sharing.

Features:

- Records measurement data
- Tolerance judgment
- Statistical analysis and history
- Records calculation results

Part No.	Item Description
IN 7546	Digimatic Mini-Processor
IN 7550	10-Pack Thermo Paper Rolls
IN 7572	220v Adapter



DIE BORE GAUGE TEST STAND

The Die Bore Gauge Test Stand measures the wear ring inside a die, which causes premature tool wear, punch binding and tablet capping and lamination. Each Die Bore Gauge Test Stand Set includes a digital indicator, stand and one split ball bore gauge set.

*Checking die wear is essential to maintaining die quality. It is not advisable to operate a tablet press with new tooling and worn dies. **Worn dies may reduce punch life by 80%.***

Die Bore Gauge Test Stand

Part No.	Item Description
IN 7721	Die Bore Gauge Stand
IN 7734	Digital Indicator (Std/Imp)
IN 7736	Digital Indicator Metric

Split Ball Bore Gauge with Setting Rings

Part No.	Range
IN 7740	0.037 – 0.061"
IN 7741	0.060 – 0.157"
IN 7722	0.145 – 0.290"
IN 7744	0.95 – 1.55 mm
IN 7745	1.5 – 4.0 mm
IN 7746	3.7 – 7.3 mm

Split Ball Bore Gauge without Setting Rings

Part No.	Range
IN 7742	0.3 – 0.4"
IN 7743	0.4 – 0.7"
IN 7747	7 – 10 mm
IN 7748	10 – 18 mm



Call for replacement parts



Die Wear Ring



Split Bore Gauge



Split Bore Gauge Before Insertion Into Die



Split Bore Gauge in Die



Split Bore Gauge in Die

WIGAUGE DIGITAL TESTER

The WiGauge is a digital die bore test gauge that collects measurements and wirelessly transmits them into a spreadsheet using Bluetooth technology. Increases efficiency, eliminates cumbersome cables, and tests dies and die tablet segments in any environment.

Features:

- Calibrated, rugged handle for quick measurement checks
- Software allows for logging of measurements to CSV/Excel files
- LCD screen that shows a live reading, as well as Min/Max
- Fits most diatest M6 and M10 bore heads
- Class 1 Bluetooth antenna for easy data transmission up to 15 meters
- Chargeable/replaceable battery pack with up to 10 hour life

WiGauge	
Part No.	Item Description
IN 7727	WiGauge Diatest Kit w/ M6 Adapter Assembly
IN 7728	Diatest Probe Set - 0.057" - 0.169" w/ master ring set 1.448 - 4.293 mm
IN 7729	WiGauge Diatest Kit w/ 0.165" - 0.394" w/ master ring set 4.191 - 10 mm



SPC CONNECTING CABLES

Please consult specification sheet for input cable requirement.

- For use with all calipers **without** absolute encoder
- For use with all calipers **with** absolute encoder

Part No.	Plug Type	Length	Reference No.
• IN 7460	Straight	40"	905338
• IN 7462	Back	40"	905689
• IN 7464	Right	40"	905691
• IN 7466	Left	40"	905693
• IN 7470	Straight	40"	959149
• IN 7461	Straight	80"	905409



DIGITAL INDICATOR WITH ABSOLUTE ENCODER

Use the Digital Indicator to check the overall length, working length and cup depth of a punch to ensure proper tablet hardness, thickness and weight consistency. The indicator can also be used to check die table run out for proper feeder installation.

Features:

- Inch/mm conversion
- SPC port
- Always displays "Absolute Position" from origin at power-on
- Initial zero-setting repeated over battery life



Part No.	Measuring Range	Accuracy
IN 7734	0 - 0.5" (0 - 12.7 mm)	± 0.00012"

- Upper & Lower tolerance limit setting
- Go/±No Go judgement
- Use with IN 7470 cable (See above)

DIAL INDICATOR REPLACEMENT POINTS

Eliminates scratching of punch cups.

Part No.	Item Description
IN 7507	Nylon Indicator Replacement Tip
IN 7513	Long Indicator Tip
IN 7506	22-Piece Set (9 Flat, 5 ball, 4 Tapered, 3 Regular, 1 Bent-Regular)



IN 7506

MICROMETER STANDS

- Weighted base
- 6.5" x 4.5" x 3.5" (165 x 114 x 89 mm)

Part No.	Item Description
IN 7498	Fixed-Angle Micrometer Stand
IN 7499	Swivel-Angle Micrometer Stand



Micrometer
Sold Separately
(See page 57)

WISE WITH VACUUM BASE & JAW PROTECTORS

Designed to secure a variety of work pieces.
Great for safely removing and replacing keys.

- 360° rotation, 360° swivel, 90° pivot
- Adjustable jaws (0 – 2.5")
- Rubberized jaws protect your tools

Part No.	Item Description
IN 7562	Vise with Vacuum Base



V-BLOCK

Custom manufactured with a clearance for the punch head and key. Use to check punch and die concentricity. *Includes clamp.*

Part No.	Item Description
IN 7565	5" V-Block with Head and Key Cutout
IN 8000	Punch Body Securing Block



PUNCH HOLDERS

Stabilize punches when taking punch measurements.
Can be used with keyed or non-keyed punches.

Part No.	Tooling Size
IN 7575	"B" Tooling
IN 7577	"D" Tooling
IN 7574	533/328-33 Station Turret
IN 7576	533/328-45 Station Turret



HEAD GAUGE GO/NO-GO

Accurately checks and confirms punch head and profile.

Custom head gauges are available upon request.

Part No.	Type	Part No.	Type
IN 7526	TSM "B"	IN 7551	European (EU-19) - "B"
IN 7528	TSM "D"	IN 7552	European (EU-1) - "D"
IN 7527	533/328 45-Station Turret	IN 7525	DS3
IN 7672	533/328 33-Station Turret	IN 7553	Kilian European – "B"
IN 7529	Domed – "B"	IN 7555	Korsch European – "B"
IN 7530	Domed – "D"	IN 7556	Korsch European – "D"
IN 7534	Domed – DS3	IN 7557	Manesty European – "B"
IN 7535	Domed – 533/328 45-Station Turret	IN 7558	Manesty European – "D"
IN 7673	Domed – 533/328 33-Station Turret	IN 7559	Special Order

Recalibration certification available. See part IN 7400 (pg 56)



DIE POCKET GAUGE

Accurately checks and confirms if turret die pocket is oversized or worn.

Custom die pocket gauges are available upon request.

Part No.	Diameter	Part No.	Diameter
SU 0157	0.9455" (24.02 mm)	SU 0163	1.5005" (38.11 mm)
SU 0159	1.1880" (30.18 mm)	SU 0153	1.5010" (38.13 mm)
SU 0160	0.8666" (22.01 mm)	SU 0165	1.6255" (41.29 mm)
SU 0161	1.313" (33.35 mm)	SU 0171	1.1885" (30.19 mm)



CERTIFIED TURRET INSPECTION KITS

Each kit includes punch guide go/no-go gauge, alignment rods and corresponding die(s).

- Helps avoid tablet capping and lamination by ensuring proper punch tip to die bore alignment
- Easy-to-use instructions included



Part No.	Type
IN 7658	"D" Inspection Kit
IN 7659	"B" Inspection Kit
IN 7664	533/328-45 Inspection Kit
IN 7668	533/328-33 Inspection Kit
IN 7660	Fette "B" 19 mm Inspection Kit Kikusui "B" New Style
IN 7661	Fette "D" 25.35 mm Inspection Kit Kikusui "D" New Style
IN 7662	DD2 Inspection Kit
IN 7663	DS3 Inspection Kit
IN 7641	Courtoy "B" Inspection Kit
IN 7677	Korsch "B" Inspection Kit
IN 7678	Korsch "D" Inspection Kit
IN 7622	Kikusui "B" Inspection Kit - Old Style
IN 7666	Kikusui "D" Inspection Kit - Old Style
IN 7674	Special Order Inspection Kit

DELUXE DIGITAL HANDHELD MICROSCOPE

The Deluxe Digital Microscope provides spectacular detail in a small handheld package. *CE Compliant*

Features:

- 10X ~ 50X, 240X variable magnification
- 5 mega-pixels
- 2584 x 1936 resolution
- *Built-in polarizer* for glare reduction
- 8 white built-in LEDs (On/Off)
- Built-in measurement feature with calibration
- Micro-touch trigger for quick photos/videos
- Metal aluminum alloy encasement
- USB powered



Punch Tip Damage
Photo Taken with IN 7951



Punch Tip Damage
Photo Taken with IN 7951

Dimensions (H x D):

4" x 1.26" (102 x 32 mm)

Part No.	Item Description
IN 7951	Deluxe Digital Handheld Microscope Kit

Recommended Accessories

Part No.	Item Description
IN 7960	Table Top Stand
IN 7963	Dual USB Foot Pedal Trigger
IN 7966	Removable Diffuser Kit for IN 7951

Optional Accessories

Part No.	Item Description
IN 7961	Pole Extension for IN 7960
IN 7965	Flexible Arm for IN 7960
IN 7964	XY Rotating Base
IN 7967	Polarized LED Light (USB Powered)
IN 7575	"B" Punch Holder
IN 7577	"D" Punch Holder



*Shown with item IN 7965

HANDHELD DIGITAL MICROSCOPE

View small defects in tablets, punches and dies at up to 500X magnification on the built-in, flip-out screen. Store magnified images and video for later review. The unit comes with a microUSB cable for downloading images and recharging.

Features:

- 20X ~ 200X optical magnification, 500X digital magnification
- 5 mega-pixels
- 2592 x 1944 resolution
- 3" TFT color LCD screen with 960 x 240 pixel resolution
- AVI video stored at 640 x 480 resolution
- Save images on microSD card up to 32 GB (not included)
- Compatible with Windows 10/8/7/Vista/XP
- 8 white built-in LEDs
- MicroUSB cable for downloading images and recharging
- Full charge provides up to four hours of operation

Dimensions (H x D):

5" x 4.5" x 1" (127 x 114.3 x 25.4 mm)

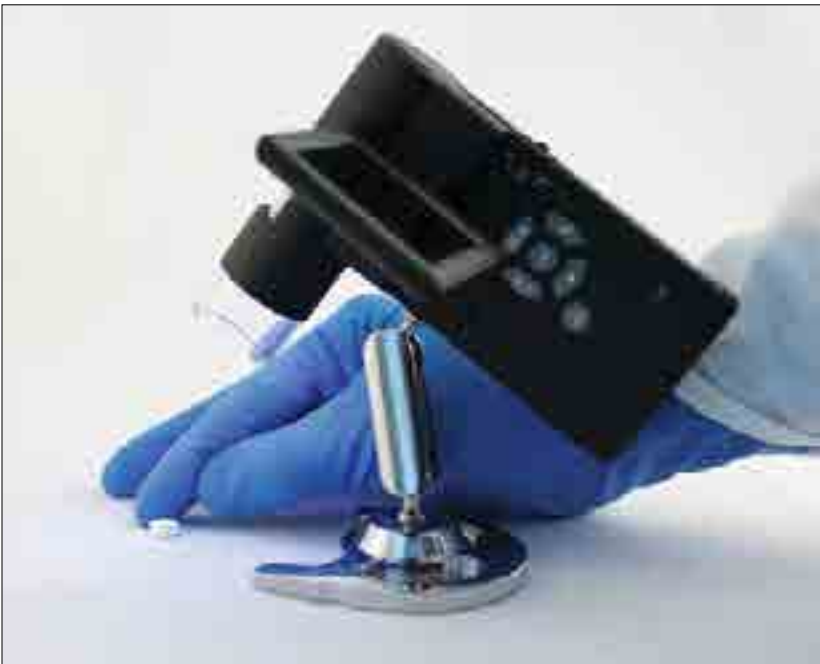
Part No.	Item Description
IN 7975	Handheld Microscope with LCD screen



8 bright white LEDs illuminate



3" color LCD screen provides instant viewing



Compact design allows for on-the-go inspection

TOOL MANAGEMENT II (TM-II) SOFTWARE PACKAGE

The TM-II application software is a complete tool-control and inspection database. TM-II helps tablet manufacturers improve product quality and consistency, eliminate waste, and ensure compliance with cGMP record-keeping requirements.

TM-II allows users to manage their tooling through:

- Tool matching
- Tool storage
- Tool inspection
- Tolerance reporting
- Monitoring tool usage
- Identifying tool location
- Maintaining tool drawing files
- Printing reports
- Creating purchase orders for additional or replacement tool sets
- and more!

TM-II places comprehensive tool management and inspection information at your fingertips, resulting in better tablet quality and reduced press downtime. Management and purchasing will also benefit from access to the TM-II database information.

The software can be used with various digital electronic measuring devices such as the LVS (IN 7443) and Digital Indicator (IN 7508).

Tool Management 2 System

Part No. Item Description

IN 7578 TM-II Software (Single-User)

Software Options

Part No. Item Description

IN 7599 TM-II Multi-Tip Module (Software add-on)

IN 7560 TM-II Software Validation Package

IN 7579 TM-II Multi-User Network Upgrade (5-user)



LASER VISION SYSTEM (LVS-600)

This non-contact laser punch inspection system automatically measures the critical dimensions of a punch: working length, cup depth, and overall length. Plus, it is fully integrated with the TM-II application software. The LVS camera can be used to capture digital images of the punch and store them with the punch measurements in the TM-II database.

Features:

- Multi-tip tooling capability
- Efficient one-step measurements
- Non-contact tool measuring
- State-of-the-art laser technology
- Automatic real-time measurements
- All electrical, few moving parts
- Multi-purpose camera with zoom lens
- Image capture function

LVS Inspection System

Part No.	Item Description
IN 7443	LVS Automatic Laser Punch Inspection System

Available Options

Part No.	Item Description
IN 7448	"D" Tooling Nest
IN 7444	"D" Tooling Reference Point Length Standard
IN 7447	"D" Tooling Reference Standards
IN 7449	"B" Tooling Nest
IN 7445	"B" Tooling Reference Point Length Standard
IN 7446	"B" Tooling Reference Standards
IN 7440	FS12 Short Reference Standard
IN 7441	FS12 Long Reference Standard

Optional Accessories

Part No.	Item Description
LE 7051	LVS Equipment Cover



TOOL MANAGEMENT II (TM-II) COMPATIBLE KITS

Measure tooling and capture the results into your database with these kits that were created for use with TM-II software. **All items are available for purchase separately.**

Working Length, Cup Depth, & OL Kit

Part No.	Item Description
----------	------------------

IN 7583	Working Length, Cup Depth, and OL Kit
---------	---------------------------------------

Kit Includes:

- Digital Indicator
- Data Input Tool for USB Port
- Granite Gauge Stand (6" x 6" x 2")
- Indicator Lifting Lever
- Indicator Tip - Long
- 5.25" Height Standard Gauge
- Punch Holder for "B" Tooling
- Punch Holder for "D" Tooling
- Foot Controller

Tip & Barrel Kit for 533/328 Tooling

Part No.	Item Description
----------	------------------

IN 7716	Tip and Barrel Kit for 533/328 Tooling
---------	--

Kit Includes:

- 1-2" Outside Digital Micrometer
- Data Input Tool for USB Port
- Connecting Cable
- Foot Controller

Tip & Barrel Kit for "B" & "D" Tooling

Part No.	Item Description
----------	------------------

IN 7715	Tip and Barrel Kit for "B" and "D" Tooling
---------	--

Kit Includes:

- 0-1" Outside Digital Micrometer
- Data Input Tool for USB Port
- Connecting Cable
- Foot Controller



Laser Vision System (LVS) laser focused on a multi-tip punch

Tip Concentricity Kit

Part No.	Item Description
----------	------------------

IN 7717	Tip Concentricity Kit
---------	-----------------------

Kit Includes:

- Digital Indicator
- Data Input Tool for USB Port
- Connecting Cable
- Granite Gauge Stand (6" x 6" x 2")
- Indicator Lifting Lever
- Indicator Tip - Long
- 5" V-Block with Head & Key Cutout & Clamp
- Foot Controller

Die ID, OD, & OL Kit

Part No.	Item Description
----------	------------------

IN 7718	Die ID, OD, and OL Kit
---------	------------------------

Kit Includes:

- 0-1" (0-25.4 mm) Digital Micrometer
- 1-2" Outside Digital Micrometer
- 6" Digital Caliper
- Data Input Tool for USB Port
- Connecting Cable
- Foot Controller

HORIZONTAL OPTICAL COMPARATOR

The Horizontal Optical Comparator provides a bright, crisp image for error-free inspection of compression tooling and tablets. The comparator comes equipped with factory-mounted linear glass scales for the display counter. The comparator is perfect for inspecting punch tip wear, punch head profiles, surface details of punch tips, embossed logos, bisects and more.

**MUST
HAVE**

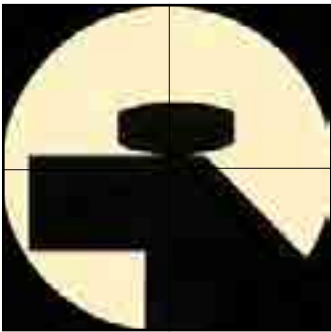
Features:

- Generous X, Y work stage travel (8" x 4"/203.2 x 101.6 mm)
- Handles workloads up to 100 lb (45 kg)
- 10X projection lens
- Fiber illuminator included
- 120 VAC, 50/60 Hz

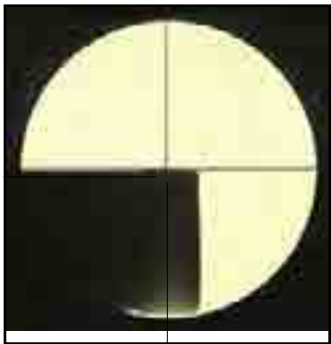
Part No.	Item Description
IN 7800	Horizontal Optical Comparator
IN 7801	Machine Stand
IN 7803	KA Counter

Exterior Dimensions (L x W x H):

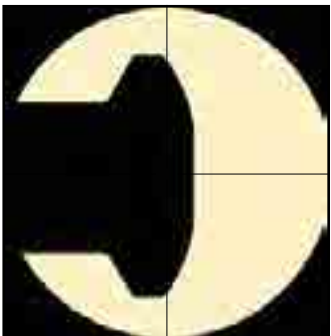
53.3" x 25.5" x 43.3" (1355 x 648 x 1100 mm)



Check tablet profile and flashing



A must for checking tip wear



Checks head configuration



Contact us about customized overlays.

Shown with IN 7801 and IN 7803

LED MAGNIFIERS

These illuminated magnifiers set the standard for surface-mounted LEDs with full dimming and quadrant contrast control, multi-angle LEDs for shadowless lighting, and reduced glare, heat, and energy consumption.

Features:

- 7" x 5.25" rectangular lens with 43" arm
- 4-Diopter (2X) lens
- 4X the lumen output of a standard magnifier
- IEC Plug Design allows for 100-240v use
- Each unit uses 8 watts max

Part No.	Base	Color
IN 7701	Clamp	Carbon Black
IN 7702	Clamp	Blaze Red
IN 7703	Weighted	Carbon Black
IN 7704	Weighted	Blaze Red



Lighting Phases

LOWER CALIBRATION PUNCHES

Used to check punch tips at tablet take off.

- Low ejection can damage tablets
- High ejection can damage tools, tablet take off, feeder pans, etc.

Part No.	Type
SU 0234	B
SU 0235	D
SU 0236	B2
SU 0237	533/328-45
SU 0238	Special Order
SU 0239	Tip Deflection Punch Special Order

Recalibration certification available. See part IN 7400 (pg 56)



PUNCH HOLDERS

- Reduces tooling damage
- Safer handling and storage
- Prevents punches from rolling off work area
- Suitable for "B" and "D" tooling



Part No.	Item Description
MA 6025*	Punch Holding Strip (Yellow)
MA 6235	"B" Type Acetal Punch Holding Tray
MA 6236	"D" Type Acetal Punch Holding Tray

*Interlocking ends for expandable capacity



NATOLI KEYCHAIN LIGHT

Great for inspecting punch guides and the condition of key slots.



Part No.	Item Description
IN 9000	Natoli Keychain Light

Key **NOT** included

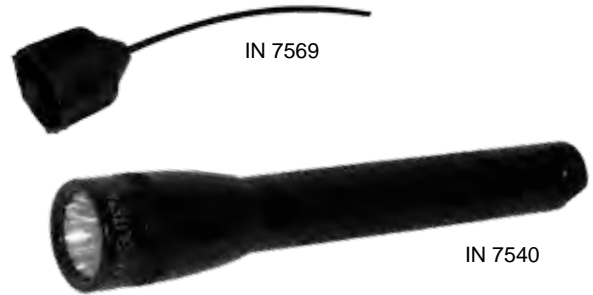
MINI MAGLITE® AND FIBER-OPTIC WAND ADAPTER

Use to illuminate punch cups in the press, turret guides, key slots and other dark areas.



IN 7569 in use

Part No.	Item Description
IN 7540	Mini Maglite® (AA batteries included)
IN 7569	7" Flexible Fiber-Optic Wand Adapter



HANDHELD MAGNIFIERS

Use to inspect punch cups and tablets.

Part No.	Item Description	Focal Length
IN 7541	4X Illuminated Magnifier (Batteries and bulb included)	4"
IN 7544	4X Single Lens Eye Loupe	2.5"



PREMIUM LED HANDHELD MAGNIFIER

This small, handheld magnifier has high-power LEDs, powered by 3 "AA" batteries. The 2" diameter lens is made of optical-grade, distortion-free glass with a magnification power of 2.5X.

Features:

- Instant-on
- Flicker-free bulb
- Life of 50,000 Hours
- Includes carrying case

Part No.	Item Description
IN 7585	Mini Handheld Magnifier/12 White LEDs
IN 7586	Mini Handheld Magnifier/24 White LEDs





**SOME
THINGS SHOULD
STICK...**

**YOUR
GRANULATION
SHOULD
NOT.**

Sticking problems? Natoli may have your solution.

Natoli Engineering offers unsurpassed tablet press tooling using only the highest grade materials that resist sticking, resulting in more efficient production and less waste. If you are experiencing sticking with your current tooling line, contact one of our specialists today to see how Natoli can help you optimize quality, production and satisfaction. Let us prove to you why we are the global leader in tooling manufacturing and service.

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YOU DEMAND. WE DELIVER.

TOOLGUARD: TOOLING MAINTENANCE PROGRAM

POLISHING : BASIC (LEVEL 1)



Using the correct polishing equipment is essential in reducing unwanted tableting issues like sticking, picking and lamination.

Part No.	Item Description
MA 8001	Level 1 Polishing Kit

The Basic Polishing Kit provides the essentials to start a quality polishing program. Give punch cups a mirror finish, verify punch cup depths, and restore necessary land to tips.

Kit Includes:

- A. Granite Indicator Base
- B. Digital Indicator: SPC port readout with lug back
- C. Punch Holder: "B"
- D. Punch Holder: "D"
- E. Mini Handheld Magnifier with White LED Light
- F. ¼ Fold Heavy-Duty Work Wipes (150 wipes)
- G. ¼ Fold Work Wipes Dispenser
- H. Q-Tip 3" Applicators
- I. Hand Polisher: 110 Volt Motor & Foot Control
- J. Fine Dental Brushes: 0.0925" shank (24)
- K. Felt Bobs: ¾" x ¾" x 1/8" (12)
- L. Felt Bobs: ½" x ½" x 1/8" (12)
- M. Felt Bobs: 3/8" x 3/8" x 1/8" (12)
- N. Felt Bobs: ¼" x 3/8" x 1/8" (12)
- O. Abrasive Dressing Stick
- P. Fine Diamond Compound
- Q. 400 grit Deburring Stone
- R. 3-in-1 Stoning Oil
- S. Diamond Compound Lubricant
- T. Green Chrome Gloss Bar
- U. White Rouge Bar
- V. White Polishing Paste
- W. Punch Holding Strips (2)
- X. 6" Phenolic Embossing Pick (6)
- Y. Protectant Facemask

Request a brochure for additional information on our maintenance kits!



TOOLGUARD: TOOLING MAINTENANCE PROGRAM

POLISHING : ADVANCED (LEVEL 2)

Upgraded polishing system and thorough visual inspections ensure professional grade polishing results.

Part No.	Item Description
MA 8003	Level 2 Polishing Kit

Our Advanced Polishing Kit includes everything you need to properly polish punches to a high-chrome finish and remove slight surface corrosion and abrasions. This kit is the best, hands-on polishing solution available from Natoli. Be sure to refer to the Polishing DVD before starting, or have personnel trained by a Natoli polishing expert.

Kit Includes:

- A. Granite Indicator Base
- B. Digital Indicator: SPC port readout with lug back
- C. Punch Holder: "B"
- D. Punch Holder: "D"
- E. Black Rectangle LED Magnifier
- F. ¼ Fold Heavy-Duty Work Wipes (150 wipes)
- G. ¼ Fold Work Wipes Dispenser
- H. Q-Tip 3" Applicators
- I. Hand Polisher: 110 Volt Motor & Foot Control
- J. Fine Dental Brushes: 0.0925" shank 12/pack (2)
- K. Felt Bobs: ¾" x ¾" x ⅛" (12)
- L. Felt Bobs: ½" x ½" x ⅛" (12)
- M. Felt Bobs: ⅜" x ⅜" x ⅛" (12)
- N. Felt Bobs: ¼" x ⅜" x ⅛" (12)
- O. Abrasive Dressing Stick
- P. Fine Diamond Compound
- Q. 400 Grit Deburring Stone
- R. 3-in-1 Stoning Oil
- S. 8" Deburring Wheel
- T. 10" Unsewn Buffing Wheels (2)
- U. Diamond Compound Lubricant
- V. Black Floor Mat*
- W. Green Chrome Gloss Bar
- X. White Rouge Bar
- Y. White Polishing Paste
- Z. Punch Holding Tray: "B"
- AA. Punch Holding Tray: "D"
- BB. 6" Phenolic Embossing Picks (6)
- CC. Protectant Facemask
- DD. Natoli Polishing DVD*

Kit Option A:

- EE. Bench Mount Polishing Motor*
- FF. Bench Mount Buffing Hood*

Kit Option B:

- GG. Stainless Steel Polishing Station w/Polishing Motor
- HH. Replacement Filters (12)
- II. Black Shelf Mat

*not shown



GG. Stainless Steel Polishing Station w/ Polishing Motor



STAINLESS STEEL POLISHING STATION

The Natoli Polishing Station includes all the necessary supplies and features to quickly and accurately rework and polish a variety of tooling. **The Polishing Station provides the only polishing method to remove sharp punch tips and restore land.**



Features:

- Polished 18-gauge brushed stainless steel
- Dust hood with light and top shelf
- Main access door with safety switch
- Easy access to filters for simple replacement
- Dual downdraft vacuum system
- Safety cover

Exterior Dimensions

Base footprint: 34.25" x 16" (870 x 406 mm)
Floor to top of cabinet: 37" (940 mm)
Across front: 46" x 20" (1168 x 508 mm)
Floor to top of shelf: 52.5" (1334 mm)

Part No.	Item Description
MA 5501	Complete Polishing Station, 115v
MA 5601	Complete Polishing Station, 220v

Complete Polishing Station Includes

Part No.	Item Description
MA 5502	6 Filters for MA 5501 or 5601
MA 5076	2 Unsewn 10" Buffing Wheels
MA 5044	8" Deburring Wheel
MA 5048	2 Deburring Wheel Hubs
MA 5302	White Fine Rouge Bar
MA 5010	Abrasive Dressing Stick

Optional Accessory

Part No.	Item Description
MA 5095	Floor Mat 36" x 24" (914.4 x 609.6 mm)



Shown with optional deburring wheel.

Punch with J-Hook wear



After Buffing on a Polishing Station



MA 5095 Floor Mat

PUNCH POLISHING MOTORS

- CE Compliant
- Safety cover
- 60 Hz, single-phase
- ¾ hp (3450 rpm)
- 5/8" diameter shaft
- *Wheels not included (See page 83)*



Part No.	Item Description
MA 4042	115v Dual-Shaft Buffer Motor
MA 4047	220v Dual-Shaft Buffer Motor

BENCH-MOUNTED HOODS FOR POLISHING MOTOR*

Protective hood with exhaust ports and top shelf mounts to worktables.

- 36" x 16" x 16" (914 x 406 x 406 mm)

Part No.	Item Description
MA 5057	18-Gauge Galvanized Steel Hood
MA 5058	18-Gauge 300-Series Stainless Steel Hood

* Motor not included.



SERIES 10 HAND POLISHING KIT

Properly polish tools for peak press performance, consistent tablet quality and maximum tool life. The Natoli Hand Polishing Kit is excellent for polishing machine parts requiring a polished surface, or punch cups with moderate to severe abrasion.

- Back mounted on/off switch for safety
- CE compliant

Complete Kit Includes:

- 22,000 rpm, 115v with ¼" Collet
- 1/8" Precision Collet Insert
- 2 Special Narrow Wrenches
- Abrasive Dressing Stick 1" x 1" x 6"
- Green #45 Fine Diamond Compound
- Felt Bobs: ¾" x ¾" (12)
- Felt Bobs: ⅝" x ⅝" (12)
- Felt Bobs: ½" x ½" (12)
- Felt Bobs: ¼" x ⅜" (12)
- Felt Bobs: 1" x 1" (12)

Part No.	Item Description
MA 5045	Complete Hand Polishing Kit with Molded Case



POLISHING DVD

Learn how to properly polish tablet compression tooling with Natoli's new *Experts Guide to Tool Polishing* DVD.



Part No.	Item Description
SU 9000	Experts Guide to Tool Polishing DVD

COMPLETE POLISHING KITS

The Natoli Polishing Kit includes all the necessary accessories for polishing punch faces. *cCSAus* approved.

Part No.	Item Description
MA 5001	110/115v Complete Polishing Kit
MA 5000	220/230v Complete Polishing Kit

Kit Includes*:

- Hand Polishing Motor with Foot Speed Control
- Clamp-On Weighted Hand Piece Stand
- Flexible Shaft with Sheath
- Hand Piece for Shaft with Chuck Key
- Fine Dental Brushes 0.0925" shank (24)
- White Nylon Dental Brushes 1" dia. (12)
- White Nylon Brushes 3/4" dia. (12)
- Felt Bobs: 3/4 x 3/4" (12)
- Felt Bobs: 3/8 x 3/8" (12)
- Felt Bobs: 1/2 x 1/2" (12)
- Felt Bobs: 1/4 x 3/8" (12)
- Abrasive Dressing Stick
- White Rouge Bar
- 320 Grit Deburring Stone
- 400 Grit Deburring Stone
- 1 Green Chrome Gloss Bar
- 6" Phenolic Embossing Picks (6)
- Green #45 Fine Diamond Compound
- 3-in-1 Stoning Oil
- White Polishing Paste

*Kit pieces may also be purchased individually.



POLISHING ACCESSORIES

Natoli offers a variety of polishing compounds and accessories to ensure proper punch maintenance.

- SDS (Safety Data Sheets) included where applicable

Polishing Compound Grade Recommendations

- Fine – Use to achieve a mirror finish
- Medium – Use for fine finishing



MA 5302



MA 5301



MA 5020



MA 5304



MA 5012



MA 5011



MA 5085

Part No.	Item Description	Size
• MA 5302	White Fine Rouge Bar	9½ x 2 x 2"
• MA 5301	Green Chrome Gloss Bar*	6½ x 1½ x 1½"
• MA 5304	Polishing Paste	4 oz
• MA 5305	Polishing Paste	8 oz
• MA 5011	Yellow #42 Medium Diamond Compound	5 g tube
• MA 5012	Green #45 Fine Diamond Compound	5 g tube
MA 5085	Diamond Compound Lubricant (Enhances diamond compound effectiveness)	1 Quart
MA 5020	Stoning Oil	4 oz

*Specially formulated for sticky products. Green chrome gloss will not produce a mirror finish as bright as white fine rouge.

Note: MA 5302 and 5301 are for use with felt bobs and unsewn buffing wheels

Note: MA 5304, 5305, 5011, and 5012 are for use with felt bobs and fine dental brushes

DEBURRING STONES

Removes burrs and J-hooks on punch tips, which causes capping and laminating. Removes burrs on die ODs. Restores land on punches.



Part No.	Grit	Size
MA 5019	320	6 x ½ x ½"
MA 5016	400	6 x ½ x ½"

Use with MA 5020 Stoning Oil

FINE DENTAL BRUSHES

Ideal for light to medium punch cup polishing on plain or embossed tools.

Part No.	Item Description	Shank
MA 5004	12 Fine Dental Brushes	.09" (2.29 mm)



NYLON BRUSHES

Use with handheld polisher to polish punch cups.

Part No.	Item Description	Size	Shank
MA 5027	12 Nylon Brushes	1" (25.4 mm)	.09" (2.29 mm)
MA 5028	12 Nylon Brushes	¾" (19.05 mm)	.09" (2.29 mm)



FELT BOBS

Use with handheld polisher for medium to heavy punch cup polishing on non-embossed tools.

- Use abrasive dressing stick (MA 5010) to form to the punch cup radius.

Part No.	Item Description	Size	Shank
MA 5106	12 Felt Bobs	1 x 1" (25.4 x 25.4 mm)	⅛" (3.18 mm)
MA 5006	12 Felt Bobs	¾ x ¾" (19.05 x 19.05 mm)	⅛" (3.18 mm)
MA 5008	12 Felt Bobs	½ x ½" (12.7 x 12.7 mm)	⅛" (3.18 mm)
MA 5007	12 Felt Bobs	⅜ x ⅜" (9.53 x 9.53 mm)	⅛" (3.18 mm)
MA 5009	12 Felt Bobs	¼ x ⅜" (6.35 x 9.53 mm)	⅛" (3.18 mm)



HEAVY DUTY WORK WIPES AND DISPENSER

Use these quarter-fold work wipes to remove excess dirt and grime before, and polish compounds after polishing tooling. Convenient dispenser keeps wipes in order.

Part No.	Item Description
MA 3010	¼ Fold Heavy Duty Work Wipes 12" x 13" 75/Box
MA 3015	¼ Fold Work Wipes Dispenser



40-PLY UNSEWN BUFFING WHEELS

Recommended for polishing punch cups



Part No.	Item Description	Size
MA 5063	6" Unsewn Buffing Wheel	½" (12.7 mm) ID
MA 5073	8" Unsewn Buffing Wheel	½" (12.7 mm) ID
MA 5076	10" Unsewn Buffing Wheel	⅝" (15.88 mm) ID
MA 5176	10" Unsewn Buffing Wheel	¾" (19.05 mm) ID
MA 5078	12" Unsewn Buffing Wheel	1¼" (31.75 mm) ID

DEBURRING WHEEL AND HUBS

Wheel removes discoloration, rust, and foreign materials from punch barrels, heads, die ODs and die faces. *Hub must be used with deburring wheel.*

Part No.	Item Description	Size
MA 5044	Deburring Wheel* (Use to refurbish punch barrel and head angles**)	8" x 2" x 3" (203.2 x 50.8 x 76.2 mm)
MA 5046	Deburring Wheel Hub (set of 2)	¾" (19.05 mm)
MA 5048	Deburring Wheel Hub	⅝" (15.88 m)
MA 5010	Abrasive Dressing Stick* (For dressing felt bob and deburring wheel)	6" x 1" x 1" (152.4 x 25.4 x 25.4 mm)

*Use abrasive dressing stick (MA 5010) to keep polishing wheel clean and flat.
**Do not use on head flat. It may alter critical punch working length. Use on head angles and head OD only barrels.



Not required
w/MA 4042/4047 Motors

Old Style Motors Only

INDIVIDUAL POLISHING ACCESSORIES

Part No.	Item Description/Usage	Size
MA 7515	6 Linen Phenolic Embossing Picks (Safely removes product from punch face)	6" Length
MA 5010	Abrasive Dressing Stick* (For dressing felt bob and deburring wheel)	6" x 1" x 1"
MA 5025	20 Gray Ultra-Fine Scotch-Brite Pads	6" x 9"
MA 5030	20 Green Fine Scotch-Brite Pads (Use to remove surface discoloration)	6" x 9"
SU 0107	Die Bore Cleaning Brush (Use to clean die bore to prevent lower punch tips from binding in the die)	¼"
SU 0108	Die Bore Cleaning Brush	⅜"
SU 0109	Die Bore Cleaning Brush	½"
SU 0110	Die Bore Cleaning Brush	⅝"
SU 0111	Die Bore Cleaning Brush	¾"
SU 0112	Die Bore Cleaning Brush	⅞"
SU 0113	Die Bore Cleaning Brush	1"
MA 3020	Q-Tip Single Applicator (100/Bag)	3"



*Use for conditioning deburring wheel (part # MA 5044) and to achieve proper cup profile for felt bobs.

NATOLI 4-HEAD DRAG FINISHER

Automated Drag Finishers reduce the time and labor necessary to polish punches. Simply place tooling into punch holders, and punches are "dragged" or rotated through the polishing media. **Punch holders purchased separately.**

Benefits:

- Perfect for internal and external polishing
- Extremely short process times
- No jamming, scratching or breaking
- Accurate edge rounding on tools

Features:

- **Small footprint format machine, high efficiency**
- **Fully controlled run times and recipes are stored in controller**
- Easy Accessibility from all sides
- Fully guarded
- Main drive motor with gearbox
- CW/CCW running directions
- Front guard electrical interlock switch
- Touch panel display
- Round media container (volume capacity 300 L)
- Quick locking devices are fitted to the satellite heads for easy release
- Solid machine with extruded frame made of aluminum profile
- 4-heads fitted as standard
- Display- 10" head mount
- Compaclogix controller with off-the-shelf components
- Adjustment of running speed and time parameters via touch panel
- Automatic and manual operation modes with a start/stop function
- Manual quick release in & out system
- Fitted with 4 heads, 60 punches
- Holder will accommodate 15 "B" or "D" Type punches.
- Interchangeable plastic inserts
- Interior light
- Available Chiller Option

Electrical Specifications:

240v or 480v Available

4-Head Drag Finisher and Accessories

Part No.	Item Description
MA 7300	Natoli 4-Head Drag Finisher - Low Voltage Standard
MA 7301	Natoli 4-Head Drag Finisher - High Voltage Standard



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- Design tablet shape variations
- Scale tablet designs smaller or larger
- Derive tablet volume, weight, compressed density and surface area
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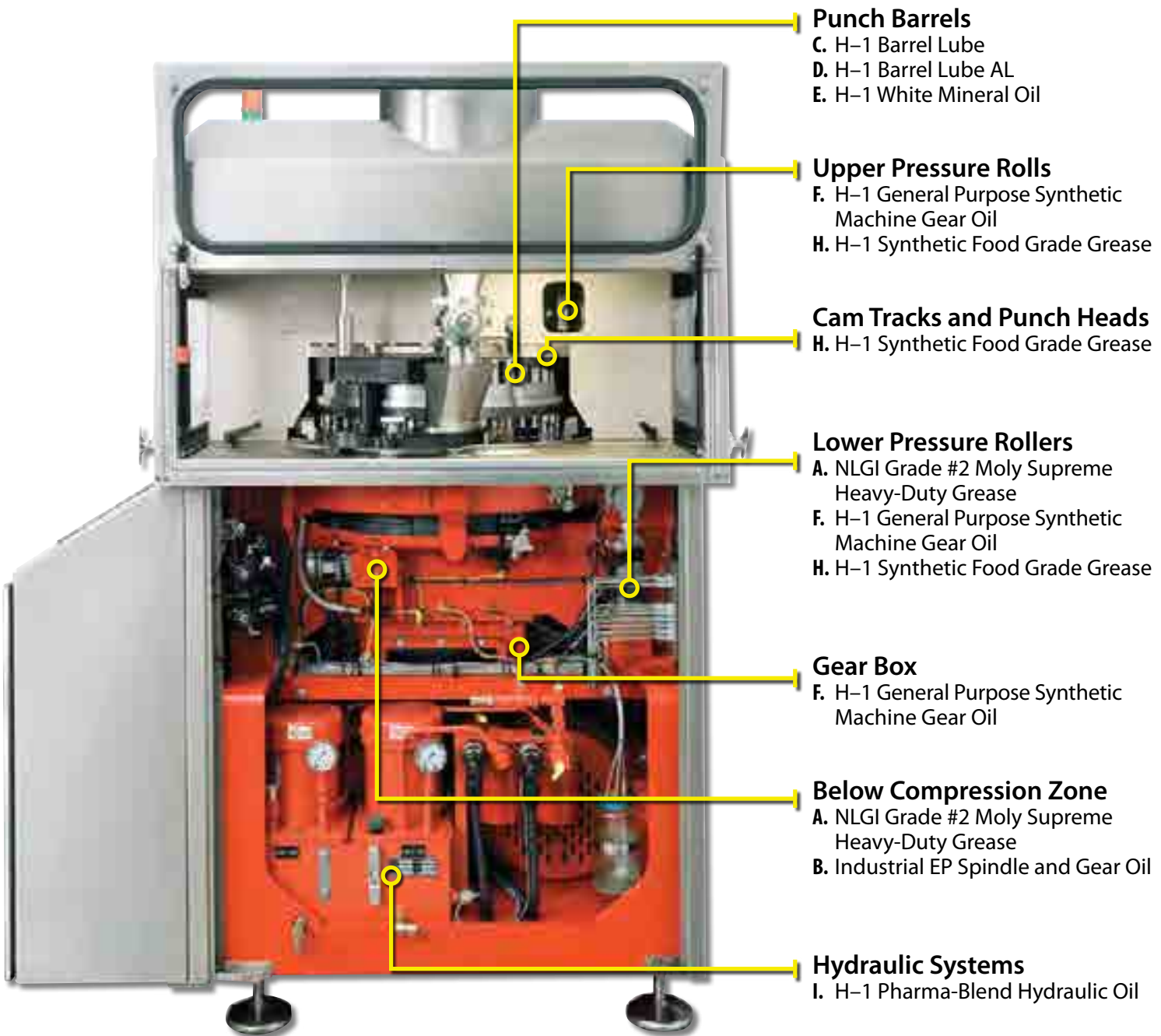
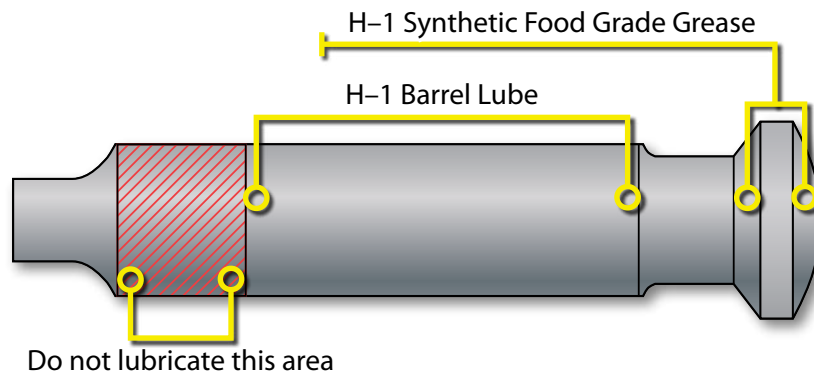
THE GLOBAL LEADER IN
TABLET COMPRESSION TOOLING

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NATOLI PUNCH AND TABLET PRESS LUBRICANT GUIDE

Premium lubricant for all makes and models of tablet presses.



All premium-quality Natoli FOOD GRADE LUBRICANTS meet or exceed USDA H-1 Requirements and FDA Regulations.

Natoli's premium quality, tested lubricants exceed the performance of other manufacturers' products.

- Apply as directed to inhibit oxidation, rust, and wear on machinery and tooling
- Use with all processing equipment requiring H-1 lubrication, such as tablet presses, packaging equipment, mixing and blending equipment, etc.
- SDS (Safety Data Sheet) provided with each product
- Check out natoli.com for more information about our premium lubricants

H-1 BARREL LUBE

- Food grade
- SAE 10
- Manual application required
- Not for auto-lube systems
- Use on punch barrels



Part No.	Item Description
SU 2521	15 oz. (425 g) Aerosol Can
SU 2525	16 oz. (473 ml) Pump

H-1 BARREL LUBE AL

- Food Grade
- SAE 10
- Specially formulated for punch barrel auto-lube systems



Part No.	Item Description
SU 2530	1 gal. (3.8 L)
SU 2560	5 gal. (18.9 L) Drum

H-1 WHITE MINERAL OIL

- For use on punch barrels
- Inhibits rust, oxidation, and wear
- Food grade

Part No.	Item Description
SU 2527	1 gal. (3.8 L)



H-1 GENERAL PURPOSE SYNTHETIC MACHINE GEAR OIL

- SAE 90
- For use in gear boxes
- Compatible with all types of seals and coatings
- Reduces deposit formation

Part No.	Item Description
SU 2533	5 gal. (18.9 L) Drum with Pull-Out Spout



H-1 TOOLING STORAGE PROTECTANT

- Food grade
- SAE 30, ISO 100
- Ideal for long-term tooling storage
- Prevents corrosion and discoloration of tools
- Easy to remove

Part No.	Item Description
SU 2545	1 gal. (3.8 L)



H-1 BARREL LUBE AL HD (Auto-Lube Heavy-Duty)

Specially formulated heavy-duty punch barrel auto-lube system oil.

- Use where UH 1 150 oil is specified
- Food grade
- SAE 40
- Antimicrobial
- Inhibits rust, corrosion, and wear
- Compatible with all types of seals

Part No.	Item Description
SU 2555	1 gal. (3.8 L)
SU 2556	5 gal. (18.9 L) Drum with Pull-Out Spout



H-1 NLGI GRADE #1 GREASE

Use on punch heads, pressure rolls, cam tracks or any process requiring a food grade grease.

- High melting point, anti wear
- Food grade
- Fortified with Microshield®



Part No.	Item Description
SU 2532	14 oz. (414 ml) Can

H-1 NLGI GRADE #2 GREASE

Use on punch heads, pressure rolls, cam tracks or any process requiring a food grade grease.

- High melting point, anti wear
- Food grade
- Fortified with Microshield®



Part No.	Item Description
SU 2508	14 oz. (414 ml) Can
SU 2512	7 lb (3.17 kg) Can
SU 2516	40 lb (18.14 kg) Drum
SU 2518	14 oz. (414 ml) Cartridge

H-1 PHARMA-BLEND HYDRAULIC OIL

- ISO 46
- Food grade
- All natural and non-toxic
- Stable from 0 – 470° F

Part No.	Item Description
SU 2537	1 gal. (3.8 L)



All premium-quality Natoli NONFOOD GRADE LUBRICANTS will reduce machinery and tooling wear, even under the most extreme pressures.

For use in areas NOT requiring food grade lubrication.

NLGI GRADE #2 MOLY SUPREME HEAVY-DUTY GREASE

- Use on variable speed pulleys, drive shafts, worm gears, weight cam gear boxes or any area below the tablet compression zone
- Blended from 100% pure paraffin base oils and the finest quality synthetic stocks

Part No.	Item Description
SU 2531	14 oz. (414 ml) Cartridge



INDUSTRIAL EXTREME PRESSURE (EP) SPINDLE & GEAR OIL

- SAE 90
- Non-foaming
- Anti-wear

Part No.	Item Description
SU 2515	½ gal. (1.9 L)



HEAVY-DUTY GREASE GUN

The zinc-plated, heavy-duty, lever-action grease gun features a rugged cast iron head with versatile three-way loading and is capable of delivering up to 10,000 PSI. A flexible 12" hose and coupler are included to allow easy access to hard-to-reach areas.

Part No.	Item Description
SU 2547	Zinc-Plated Grease Gun
SU 2548	12" Hose and Coupler only



TRAINING *Beyond* TEXTBOOKS



State-of-the-art Natoli Technical Training Center

Whether you want to improve your skills, production processes or keep up with industry trends, Natoli's courses help you achieve your goals. Our courses feature hands-on training, theories, processes, and real-world scenarios—in just a matter of days; you'll embrace new technology standards and be more productive.

Natoli's technical training center is the first non-commercial training center solely dedicated to educating the tablet compression industry. Developed with over 40 years of industry experience, Natoli's training center is the most influential and useful tablet compression training center in the United States. Industry professionals and Natoli's own highly experienced staff deliver training that cannot be found in textbooks.

TOOLING STORAGE BOXES

Tooling Storage Boxes safely store and protect punches and dies. Constructed of easy-to-clean, FDA-compliant materials, each box contains an easy lift-out tray and nested lid for stacking.



Tray Features:

- Removable tray allows interchanging of "B", "D", 533/328-45, and 533/328-33 tooling
- Trays have drainage holes for water and excess oil to escape
- Punches and dies can be stored together in sets
- Molded keyways and guides prevent tool damage
- Head support for easy tool removal

Box Features:

- Recessed handles ensure secure handling
- Lid design allows for stacking of multiple boxes

NEW Features:

- An optional handle kit allows for ease of use in multiple applications such as Ultrasonic Cleaning Systems

Exterior Dimensions (L x W x H):

18" x 11" x 7" (457 x 279 x 178 mm)

Part No.	Type (Barrel Dia)	Range	
MA 5178	"B" (¾")	72 Punches + 38	1.187" Dies or 72 Punches + 48 0.945" Dies
MA 5180	"D" (1")	48 Punches + 24	1.500" Dies
MA 5083	533/328-45 (1⅛")	45 Punches + 24	1.312" Dies
MA 5086	533/328-33 (1¼")	33 Punches + 24	1.625" Dies

Optional Items

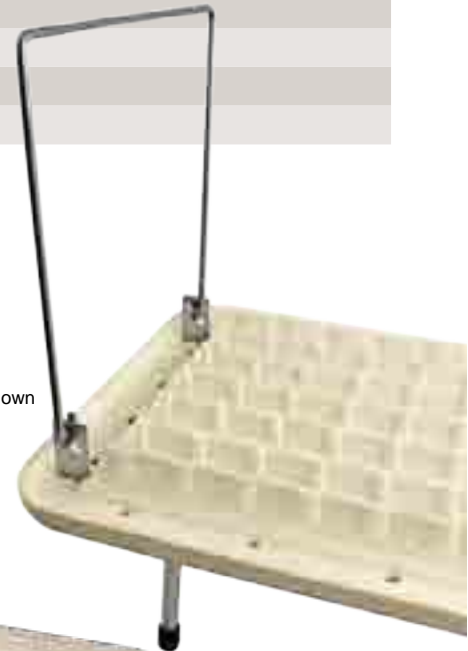
Part No. Item Description

MA 5185	"B" Handle Kit
MA 5187	"D" Handle Kit

Replacement Items

Part No. Item Description

MA 5182	Box
MA 5183	Lid
MA 5184	"B" Tray
MA 5186	"D" Tray
MA 6030	533/328-45 Tray
MA 6029	533/328-33 Tray



Handle and Leg Kit Shown on Removable Tray



TOOLING STORAGE BOX TRANSPORT CART

Safely transport and store tooling storage boxes in this heavy-duty, FDA-compliant cart. The cart includes a lockable tool drawer and two Lista® roll-out trays.

Features:

- One 3" tool drawer and two roll out trays
- HD Casters 4" x 2"
- Retainer top with ribbed matting
- Chromed push handles
- Cabinet with Keyed Lock

Dimensions (W x D x H):

28¹/₄" x 28¹/₂" x 38³/₄" (717.55 x 723.9 x 984.25 mm)

Part No.	Item Description
LE 3027	Tooling Storage Box Transport Cart



DIE SEGMENT STORAGE BOX

This heavy-duty, FDA-compliant storage box allows for safe storage and transport of your die segments and can be used with current shelving solutions to provide extra protection. Two-piece construction allows for ultrasonic cleaning.

Features:

- Two-piece construction
- Molded foam insert
- Stackable
- Works with other storage solutions

Part No.	Item Description	Capacity
MA 5650 KIT	Storage Box for 1090 or 1200 Die Segments	2
MA 5660 KIT	Storage Box for 2090 Die Segments	1
MA 5670 KIT	Storage Box for 3090 Die Segments	1
MA 5680 KIT	Segment Storage Box FE - 55	1
MA 5690 KIT	Segment Storage Box FE - 35	1
LE 3025	Segment Storage Cart	



Segment Storage Box Cart

DIE SEGMENT STORAGE SYSTEM

Natoli Engineering's new heavy-duty die segment storage system is the safest method for transporting segments without damage. These cabinets make the storage, transport, and set-up of die segments easier than ever! *This system meets FDA guidelines.*



Features Include:

- Four (4) 900 lb capacity, never-go-flat casters
- Lockable, size-adjustable drawers capable of holding 8 die segments each
- Tubular steel handles for easy handling
- Top drawer equipped with non-slip liner for storage of set-up tools
- Optional drawer dividers available for greater organization

Dimensions (W x D x H):

LE 3015 - 22" x 28.5" x 34" (564 x 725.5 x 857 mm)

LE 3016 - 44" x 28.5" x 33.5" (1,127 x 725.5 x 851 mm)

LE 3026 - 22.2" x 28.5" x 34.9" (564 x 725.5 x 886.5 mm)

Part No.	Description	Capacity
LE 3015	Single Mobile Cabinet	16 Segments
LE 3016	Double Mobile Cabinet	32 Segments
LE 3026	Stationary Cabinet	24 Segments

Replacement Items	
LE 3017	Black Diamond Mat Top for LE 3015
LE 3018	Black Diamond Mat Top for LE 3016

Top Drawer Replacement Items	
LE 3021	Tool Drawer Dividers



Stationary Cabinet

Double Mobile Cabinet shown here



CUSTOMIZABLE DRAWERS

Customize each drawer easily, without the need for tools. Each drawer adjusts to hold any size die segment making special order dividers unnecessary.

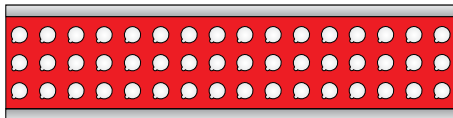
PUNCH & DIE STORAGE SYSTEM

Protect your investment with proper storage. This rugged punch and die storage system makes storage, transportation, and inspection of tools convenient and efficient.

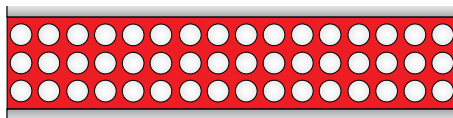
This system meets FDA guidelines.

**MUST
HAVE**

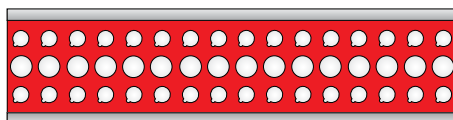
1 TOOL HOLDERS



Standard "B" Punch Holder



Standard "BB" Die Holder



Standard "B" Punch & Die Combination Holder

Part No.	Type (Barrel Dia)	Capacity
Punch Only Holders		
LE 3000	"B" (¾" or 19.05 mm)	48 Punches
LE 3001	"D" (1" or 25.4 mm)	36 Punches
Die Only Holder		
LE 3022	35 "B" (1.1875" or 30.16 mm) Dies	
LE 3013	48 "BB" (0.945" or 24 mm) Dies	
LE 3014	35 "D" (1.500" or 38.1 mm) Dies	
Punch and Die Combination Holders		
LE 3023	30 "B" (¾" or 19.05 mm) Punches & 15 "B" (1.1875" or 30.16 mm) Dies	
LE 3011	32 "B" (¾" or 19.05 mm) Punches & 16 "BB" (0.945" or 24 mm) Dies	
LE 3012	24 "D" (1" or 25.4 mm) Punches & 12 "D" (1.500" or 38.1 mm) Dies	

2 TOOLING STORAGE CABINET

Capacity:

- Each cabinet includes 4 drawers, with a maximum capacity of 6 drawers
- **Each drawer** has a maximum capacity of 4 Tool Holders (See Step 1)

Dimensions (W x D x H):

28.25" x 29.5" x 59.5"
(718 x 749 x 1511 mm)

Part No.	Item Description
LE 3010	Tooling Cabinet (includes 4 drawers and 16 pairs of brackets)
Replacement Items	
LE 3024	Extra Drawer and Brackets for LE 3010

3 TOOLING TRANSPORTER UNIT

Safely transport tools with this unit.

Capacity:

4 Tool Holders (See Step 1)

Dimensions (W x D x H):

39" x 20" x 36.5" (991 x 508 x 927 mm)

Part No.	Item Description
LE 3004	Tooling Transporter (includes four pairs of 20° brackets)
Replacement Items	
LE 3005	Pair of Extra Brackets (Straight)
LE 3006	Pair of Extra Brackets (20° Angle)



The Tool Holders feature handles for easy transfer of multiple punches and dies from storage cabinet to transporter. No tools are required and multiple layouts are available.



CHROME WIRE SHELVING

Chrome Wire Shelving Units are the ideal solution for general storage. The shelving can be used individually or connected together to increase storage capacity while saving valuable space. Purchase optional locking casters to create a mobile unit.

Features:

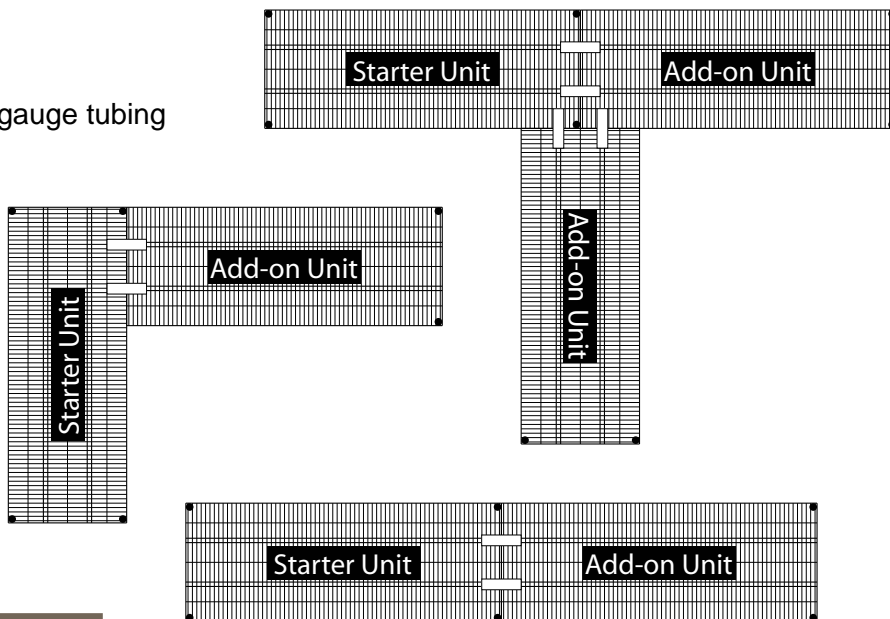
- Shelves adjust on 1" increments
- Posts are constructed of 1" round 16-gauge tubing
- Promotes air circulation
- Does not block lighting
- Flexible for growth and room layouts

Shelf Length:

48" or less
60"
72"

Shelf Capacity:

1000 lb
800 lb
600 lb



Starter Units:

- Includes 4 posts and 5 shelves

Part No.	Exterior Dimensions
MA 6042	36" x 24" x 72" (914 x 610 x 1829 mm)
MA 6043	42" x 24" x 72" (1067 x 610 x 1829 mm)
MA 6073	48" x 24" x 72" (1219 x 610 x 1829 mm)
MA 6074	60" x 24" x 72" (1524 x 610 x 1829 mm)
MA 6075	72" x 24" x 72" (1829 x 610 x 1829 mm)

Add-On Units:

- Includes 2 posts, 5 shelves and 10 "S" hooks
- Starter Unit required to use Add-On Unit(s)

Part No.	Exterior Dimensions
MA 6095	36" x 24" x 72" (914 x 610 x 1829 mm)
MA 6096	42" x 24" x 72" (1067 x 610 x 1829 mm)
MA 6097	48" x 24" x 72" (1219 x 610 x 1829 mm)
MA 6098	60" x 24" x 72" (1524 x 610 x 1829 mm)
MA 6099	72" x 24" x 72" (1829 x 610 x 1829 mm)

Individual Shelves

Part No.	Exterior Dimensions
MA 7010	36" x 24" (914 x 610 mm)
MA 7011	42" x 24" (1067 x 610 mm)
MA 7012	48" x 24" (1219 x 610 mm)
MA 7013	60" x 24" (1524 x 610 mm)
MA 7014	72" x 24" (1829 x 610 mm)



SECURITY STORAGE SHELVING

Nickel-plated, chrome-wire Security Storage Shelving is an economical solution for securing tablets, punches and other valuables. The 4-shelf unit features three adjustable shelves and a lockable front door handle. Optional casters create a mobile unit. Custom sizes available.

Part No.	Exterior Dimensions	Weight Capacity
MA 6093	48" x 24" x 60" (1219 x 610 x 1524 mm)	1000 lb per shelf



Optional Locking Casters:

Non-marking, stem swivel casters create shock-free mobility for all shelving units and will support up to 1000 lb. Casters are 5" x 1.25"

Part No.	Item Description
MA 6071	Set of 4 Locking Casters

UTILITY CARTS

Utility Carts make transporting punches, parts, and other supplies safe and simple.

Chrome Wire Utility Carts:

- 2 or 3-shelf models available
- 3" donut bumpers
- Includes 4" locking casters
- Convenient push handles

Part No.	Shelf Dimensions (L x W)
MA 6040	2 shelves – 36" x 18" (914 x 457 mm)
MA 6041	3 shelves – 36" x 18" (914 x 457 mm)



Stainless Steel Utility Carts:

- Stainless steel construction
- 2 swivel and 2 locked casters
- 1,200 lb capacity



Part No.	Shelf Dimensions (W x L x H)
MA 2000	18" x 36" x 35" (457 x 914 x 889 mm)
MA 2001	24" x 36" x 35" (610 x 914 x 889 mm)



Utility Carts:

Utility Carts clean easily, making them ideal for a variety of uses.

- Includes 5" swivel casters

Part No.	Shelf Dimensions (L x W X H)
MA 6000	40" x 18" x 33" (1016 x 457 x 838 mm)
MA 6001	Replacement Shelf – 30" x 16" (762 x 406 mm)
MA 6002	45" x 25" x 33" (1143 x 635 x 838 mm)
MA 6003	Replacement Shelf – 36" x 24" (914 x 610 mm)



REUSABLE PLASTIC DIE STORAGE TUBES

The ideal way to safely store and ship dies

Part No.	Diameter	Capacity
MA 7020	1.25" (31.75 mm)	15 "B" Dies
MA 7021	1.50" (38.1 mm)	15 "D" Dies



RED CAPS FOR PUNCHES

Keep your punch tips protected during transportation and idle time. The bag contains assorted sizes and shapes to ensure that you get a secure fit and longer-lasting punches.



Part No.	Description
MA 3030	Bag of 250 Red Caps for Punches

CARDBOARD PUNCH SHIPPING TUBES

The ideal way to safely ship punches.

Part No.	Punch Type	Tube Length
MA 5066	"B"	5¼" (133.35 mm)
MA 5068	"D"	5¼" (133.35 mm)
MA 5072	DS3	5¼" (133.35 mm)
MA 5070	533/328	7¼" (184.15 mm)



REUSABLE PLASTIC PUNCH STORAGE TUBES

The ideal way to safely store and protect punches.

- Constructed of transparent, moisture-resistant plastic
- Telescoping length adjustment (4.75" – 7.875" or 120.65 x 200 mm)
- Square shape prevents rolling



Part No.	Punch Type	Barrel Dia	Style
MA 7007	"B"	¾" (19.05 mm)	NEW Suspension Style- Yellow embossed (no foam inserts)
MA 7008	"D"	1" (25.4 mm)	NEW Suspension Style- Yellow embossed (no foam inserts)
MA 7009	328 Locking & "D" dies	1½ – 1¼" (28.58 - 31.75 mm)	Locking Not Suspended - Yellow printed
MA 7015	"BB" Die Storage	¾" (19.05 mm)	Locking Not Suspended - Yellow embossed
MA 7016	"B" Die Storage	1" (25.4 mm)	Locking Not Suspended - Yellow embossed

PLASTIC TABLET STORAGE BOX

Inspect tablets without physical contact.

- Membrane suspends tablet for easy 360° viewing

Part No.	Description
MA 7006	1.25" (31.75 mm) Plastic Tablet Storage Box (Pack of 12)



EQUIPMENT COVERS

Natoli offers a wide selection of FDA-compliant equipment covers at economical costs.

**Both covers shown on NP-500*

Standard Equipment Covers:

- Anti-static polyethylene
- Transparent pink color
- Elastic band

Part No.	Measuring Range
LE 7055	60" x 48" x 76" (1524 x 1219 x 1930 mm)
LE 7056	64" x 60" x 82" (1626 x 1524 x 2083 mm)
LE 7053	20" – 24" (508 – 610 mm)
LE 7054	10" – 14" (254 – 356 mm)

Custom Equipment Covers:

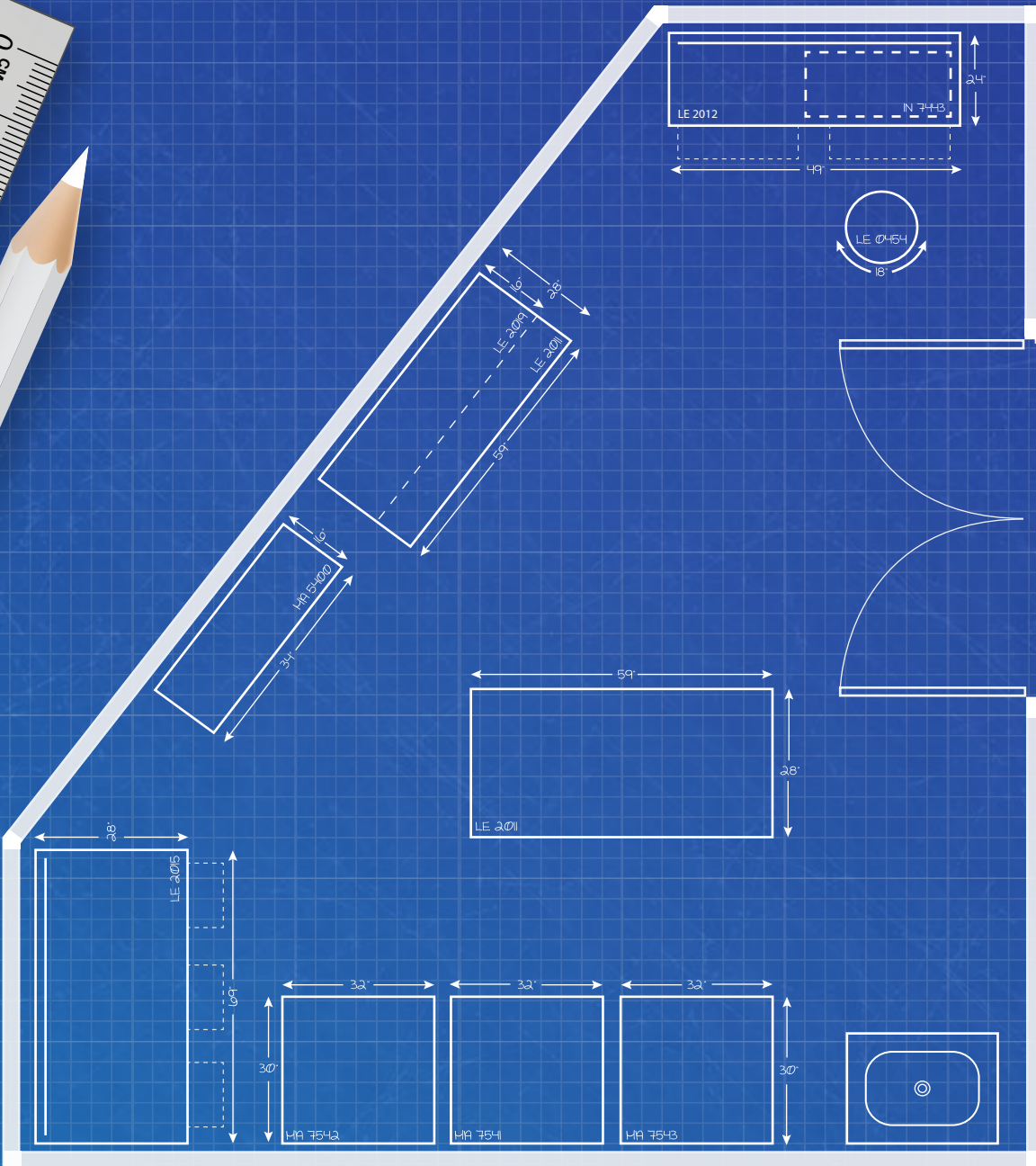
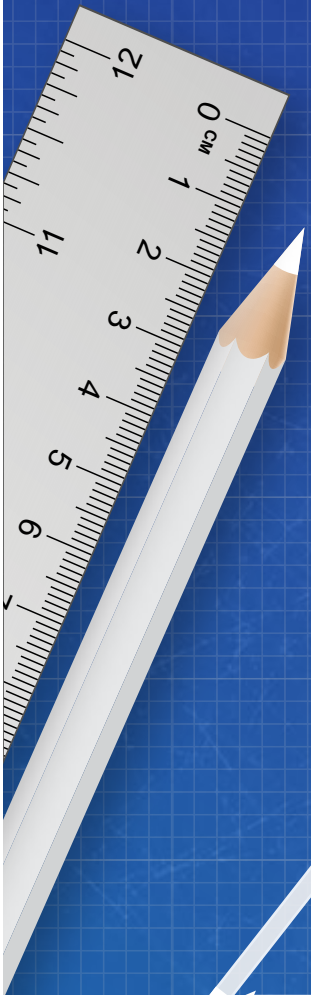
- 3-Ply vinyl laminate
- Solid white color
- Zipper

Part No.	Item Description
LE 7050	Custom Equipment Cover
LE 7051	LVS Equipment Cover

Call today to receive a **custom** quote!



Room Layout Services



Plan: 765474464-7666-1

Natoli now offers custom room layout services for inspection rooms, polishing rooms, tool storage rooms, and more. From design to installation, Natoli can provide you with a cost efficient solution.

For more information, please contact our Room Design Sepcialist at roomdesign@natoli.com.



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<u>ABBREVIATION</u>	<u>EXPLANATION</u>
°C/°F	Degrees Celsius/Fahrenheit
API	Active Pharmaceutical Ingredient
AFS	Automatic Feed System
cCSAus	Canada & United States Approved
CCW	Counterclockwise
CE	Certified for European Standards
CFM	Cubic Feet per Minute
CFR	Code of Federal Regulations
cGMP	Current Good Manufacturing Practices
CSA	Canadian Standards Association
CW	Clockwise
dia	Diameter
DSP	Digital Signal Processing
EP	European Pharmacopeia
FDA	Food and Drug Administration
ft	Foot
g	Gram
H-1	Food Grade Lubricant
Hz	Hertz
ID	Inside Diameter
IEC	International Electrotechnical Commission
in	Inch
ISO	International Organization for Standardization
kg	Kilogram
Kp	Kilopond
kW	Kilowatt
L	Liter
lb	Pound
LCD	Liquid Crystal Display
LED	Light-Emitting Diode
LIF	Light Induced Fluorescence
LVS	Laser Vision System
MIL	Military
ml	Milliliter
mm	Millimeter
MPGM	Multi-Purpose Grease with Moly
ms	Millisecond
N	Newton
NIST	National Institute of Standards and Technology
NLGI	National Lubricating Grease Institute
OD	Outside Diameter
OL	Overall Length
OPC	OLE for Process Control (Data Communication)
oz	Ounce
PCB	Printed Circuit Board
PMT	Photomultiplier Tube
POE	Power Over Ethernet
ppm	Parts per Million
PSI	Pounds per Square Inch

<u>ABBREVIATION</u>	<u>EXPLANATION</u>
PTFE	Polytetrafluoroethylene (Teflon)
QC	Quality Control
rpm	Revolutions Per Minute
SAE	Society of Automotive Engineers
SC	Strong Cobb
SDS	Safety Data Sheets
SPC	Standard Process Control
TLR	Timken Load Rating (Indicates wear-protection)
TPM	Tablets Per Minute
TPH	Tablets Per Hour
µm	Micrometer
UHMW	Ultra High Molecular Weight
UL	Underwriters Laboratories
USB	Universal Serial Bus
USDA	United States Department of Agriculture
USP	United States Pharmacopeia
V	Volt
VAC	Volts Alternating Current
VDC	Volts Direct Current
W	Watt
WEP	Wires Equivalent Privacy
WLAN	Wireless Local Area Network

CONVERSIONS

Dimensions

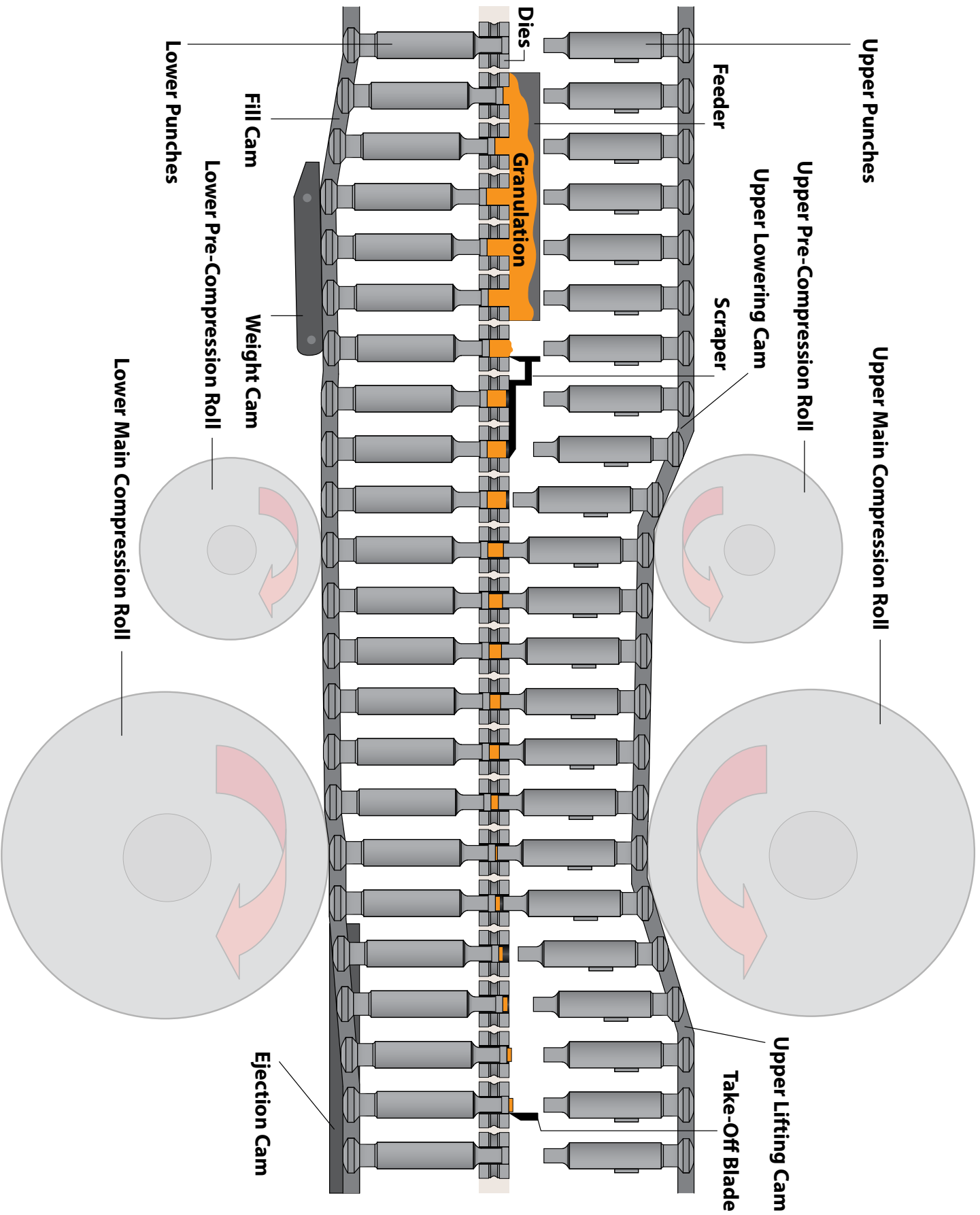
- 1 Micrometer = 0.001 Millimeters
- 1 Centimeter = 10 Millimeters
- 1 Centimeter = 0.3937 Inches
- 1 Inch = 2.54 Centimeters
- 1 Inch = 25.4 Millimeters
- 1 Foot = 12 Inches
- 1 Foot = 0.3048 Meters

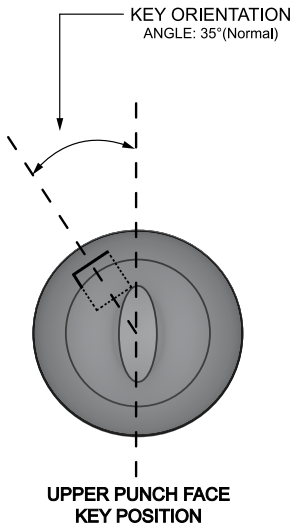
Liquid Measurements

- 1 Gram = 0.0352739619 Ounce
- 1 Ounce = 0.125 Cup
- 1 Ounce = 29.5735296 Milliliter
- 1 Ounce = 0.0295735296 Liter
- 1 Milliliter = 0.0338140227 Ounce
- 1 Milliliter = 0.00422675284 Cup
- 1 Milliliter = 0.001 Liter

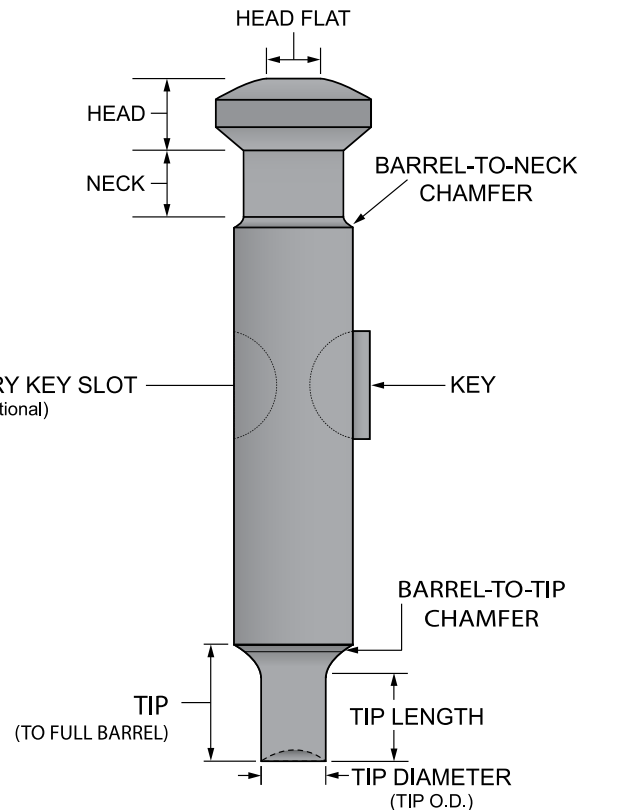
Temperature Conversion Formulas

°C x 9/5 + 32 = °F
 (°F - 32) x 5/9 = °C

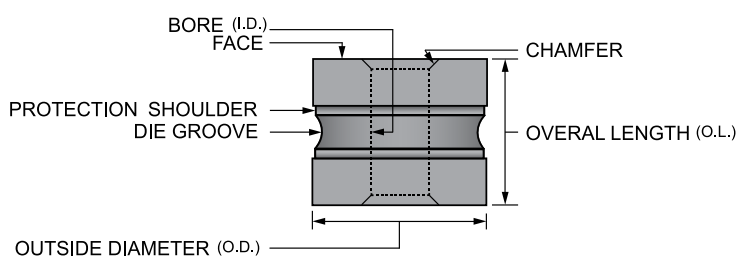




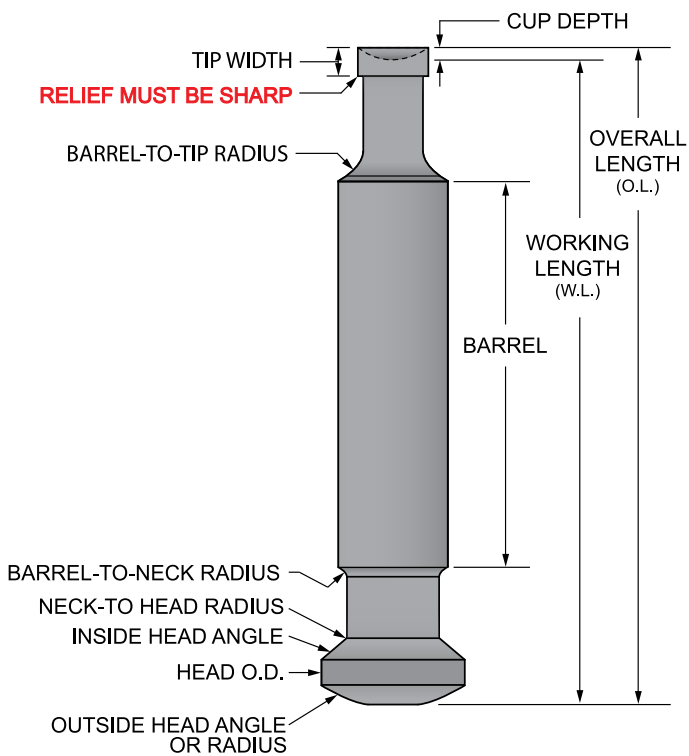
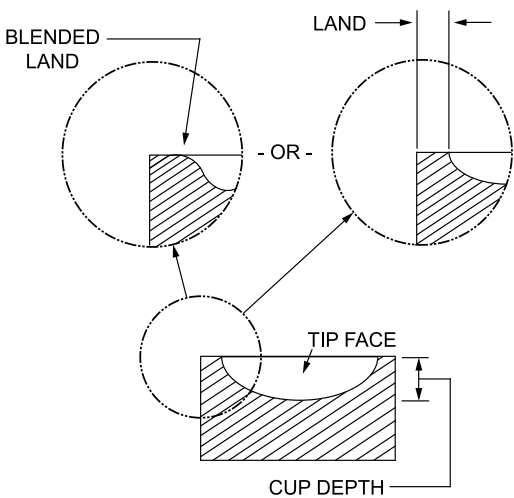
SECONDARY KEY SLOT (Optional)



UPPER PUNCH



DIE



LOWER PUNCH

Anneal: A heat-treating process used on fragile punch tips to decrease the hardness of the punch cups, reducing punch tip fracturing

Bakelite Tip Relief: An undercut groove between the lower punch tip straight and the relief; it assures a sharp corner to assist in scraping product adhering to the die wall; normally a purchased option for lower punches

Barrel or Shank: The vertical bearing surface of a punch which makes contact with the punch guides in the machine turret for vertical guidance

Barrel Chamfer: Chamfers at the ends of the punch barrel; eliminates outside corners

Barrel Flutes: Vertical slots machined into the punch barrel to reduce the bearing surface and assist in removing product in the punch guides; a purchased option for upper and lower punches

Barrel-to-Stem Radius: The radius that blends the punch barrel to the stem

Die: A component used in conjunction with the upper and lower punches; it accepts the product for compaction and is responsible for the tablet's perimeter size and configuration

Die Bore: The cavity of a die that accepts the product for compaction and determines the tablets size and shape configuration

Die Chamfer: The angled area between the top of the die and the die bore; it assists in guiding the upper punch into the die bore

Die Groove: The radial groove around the die O.D. which accepts the die lock to secure the die in position in the die table

Die Height or Overall Length: The entire height or overall length of a die

Die Lock: The mechanism used to lock a die in position after it is installed in the die table

Die Outside Diameter: The largest diameter of a die, commonly referred to as the die O.D.

Die Taper: A gradual increase in dimension, starting from a given depth in the die bore and increasing to the die chamfer; used normally to release air from the die cavity during the compression cycle

Head: The largest diameter of a common punch; it contacts the machines cams and accepts pressure from the pressure rollers

Head Back Angle: Sometimes referred to as the inside head angle, located underneath the top head angle or the top head radius; it contacts the machine camming for vertical movement of the punch within the punch guides

Head Flat: The flat portion of the head, which makes contact with the pressure rollers and determines the maximum dwell time for compression

Key: A projection, normally of mild steel, which protrudes above the surface of the punch barrel; it maintains alignment of the upper punch for reentry into the die; mandatory on upper punches with multiple tips and all tablet shapes other than round; commonly used with embossed round tablet shapes when rotation of punch causes a condition known as a double impression

Key Position: The radial and height position of a key on the punch barrel; not found in all presses

Land: The area between the edge of the punch cup and the outside diameter of the punch tip; this adds strength to the tip to reduce punch tip fracturing

Neck: Located below the head; it provides clearance as the punch cycles through the machine cams

Punch Overall Length: The total length of a punch, other than flat-face tablet configurations, that is normally a reference dimension which consists of a combination of the working length and the cup depth dimensions

Stem: The area from the barrel to the edge of the punch tip

Tip Face or Cup: The portion of the punch tip that determines the contour of the tablet face; it includes the tablet embossing

Tip Length: The straight portion of the punch stem

Tip Relief: The portion of the punch stem which is undercut or made smaller than the punch tip straight; most common for lower punches to aid in reducing friction from the punch tip and die wall as the punch travels through the compression cycle; the area where the punch tip and relief meet must be sharp to scrape product from the die wall as the lower punch travels down for the fill cycle

Tip Straight: The section of the tip that extends from the tip relief to the end of the punch tip; it maintains the punch tip size tolerance

Tooling Set: A complete set of punches and dies which accommodates all stations in a tablet press

Tooling Station: The upper punch, lower punch, and die, which accommodate one station in a tablet press

Top Head Angle: Angle from the outside head diameter to the top head radius; it allows for sufficient head thickness and smoother camming

Top Head Radius: The radius on the top of the head, which blends the top head angle to the head flat. Some head configurations may consist of only the head radius without the head angle. This radius makes the initial contact with the pressure roll and allows a smoother transition into the compression cycle

Working Length: The dimension from the head flat to the lowest measurable point of the tip face, responsible for the consistency of the tablet overall thickness



TABLET COMPRESSION ACCESSORIES CATALOG
6TH EDITION

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