

# Tabletting Science

## Sharing our Knowledge



COMMITTED TO OUR CUSTOMERS  
SHARING OUR KNOWLEDGE.





# I Holland

## The evolution of science and service

I Holland continues to build a worldwide reputation as the leading provider of tablet compression tooling, complementary equipment and services to the tableting industry. Through consistent investment in design, manufacturing resources and highly trained people, our solutions are adopted globally by leading tablet manufacturers.

We recognise that the quality of our service and technical support is a key factor that helps to position us as a world leader. We continue to pioneer innovative new solutions that, in an increasingly competitive world, help our customers to reach new levels of manufacturing flexibility and efficiency.

In order to ensure our high standards are maintained, every aspect of our business is regularly audited. It's what sets us apart and ensures our hard-earned reputation for excellence continues to shine through everything we do. This brochure provides the highlights of our comprehensive offer.



## Multi-tip tooling

I Holland have been leading the way in the production and installation of multi-tip punches and dies for over 25 years. We understand the demands for increased productivity within tablet production and have a range of options to suit varying requirements: including the ability to replace individual punch tips; to maximise the number of tips per punch; or for ease of cleaning.

## Design

Good tablet design is essential to prevent downstream problems, produce high quality tablets and maximise the efficiency of the tableting process. Our expert team can advise you on all elements of tablet and tool design and its impact on:

- Tablet shape & profile
- Breakability
- Tooling Performance
- Branding
- Anti-counterfeiting

Working with you from the very inception of a project, whether it be optimisation of existing designs, or the creation of new ones, I Holland can provide valuable expertise during the all-important tablet design phase.



“The importance of good tooling design should not be underestimated; after all punches and dies are the most critical interface with your end product, the tablet.”



## PharmaGrade® refined steel

Selecting the right steel for each application is absolutely key to the successful performance of your tablet compression tooling. Good steel selection will achieve an optimum balance of the following steel properties:

- Toughness
- Abrasive wear resistance
- Adhesive wear resistance
- High hardness levels
- Strength
- Corrosion resistance
- Clean structure
- Good machinability and formability

At I Holland we have achieved exactly that with our quality PharmaGrade® steels all of which are ESR refined at no extra cost.

## PharmaCote® coatings

The I Holland PharmaCote® range is the most scientifically proven selection of coatings in the tablet tooling market. I Holland's research into Tableting Science over many years has proven that when punch coatings are developed correctly and their beneficial characteristics are matched to those of the formulation, they can help to improve corrosion resistance, improve wear resistance and prevent sticking.

## TSAR≈Predict

TSAR≈Predict is a revolutionary, free of charge, service that forecasts the best anti-stick PharmaCote® coating solution for your formulation. TSAR≈Predict calculates single particle adhesion to the punch tip face eliminating the need for expensive and time consuming coating trials in the field. It is the culmination of two years' research in association with the University of Nottingham to investigate the root causes as to why formulations stick to tooling surfaces. Coatings recommended using TSAR≈Predict are scientifically more likely to solve a sticking issue.



## Training and knowledge sharing

I Holland is able to offer training on a variety of subjects, such as:

- Eurostandard 2010
- Tooling Specification & Procurement
- Tablet Design & Troubleshooting
- Troubleshooting – Tableting & Tooling problems
- Tooling Materials, Treatments & Coatings
- PharmaCare® 7-Step process
- Tooling Measurement

Additionally we hold three seminars per year at the I Holland production facility in the UK entitled 'Troubleshooting in Tablet Tooling' and our experts speak at numerous seminars worldwide.

## Customer service

We recognise that the very best tooling solutions should be supported with the best service available. That's why I Holland invest a great deal of time and money into understanding precisely what our customers need to help them run efficient and profitable tableting operations. This results in a range of services that really set the standard for the industry and differentiates our business. Whatever levels of support you require there's always an I Holland specialist on hand to help. Whether it's a production problem, an issue to do with maintenance of your tooling, advice on the latest tooling specifications, high quality team training or simply to share knowledge and experience, we are delighted to help. Our services are always being reviewed so be sure to check out the latest information via our website [www.iholland.co.uk](http://www.iholland.co.uk)



## Our innovations

As a leader in its field, I Holland has introduced many innovations to the tableting industry.

### Eurostandard

The Eurostandard is the most comprehensive guide available for the standardisation of tablet punches and dies. It provides guidance and advice on tooling issues and how to resolve them.

Eurostandard  
Technical  
Specification



Tablet Design



Trouble-  
Shooting



Tooling  
Materials  
Treatments  
and Coatings



Tooling  
Care and  
Maintenance



### Product developments

With I Holland you are assured that we are constantly thinking about ways to improve the performance and longevity of our products. Below is an indication of some the innovative products and services we have developed.

TSAR≈  
Predict



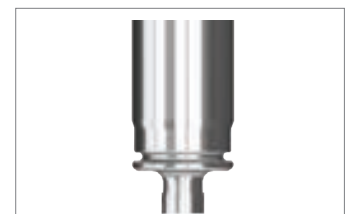
Rotahead



WIP Key



Universal  
Seal Groove



Metalized  
Bellows and  
Drip Cups

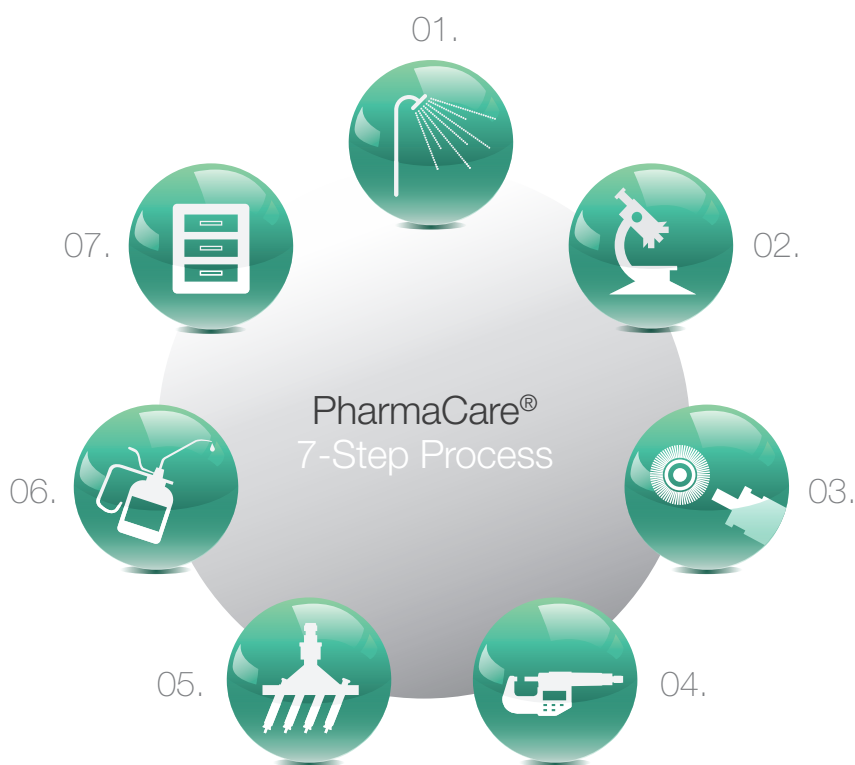




## PharmaCare® 7 step process

It's simply good business sense - maintain and store your punches and dies correctly and you will produce a better product for longer, reduce costs and enhance profitability.

PharmaCare® 7-Step Process is a planned, professional maintenance and storage programme which will contribute more than it costs to your company's turnover.



### 01. Clean

Tooling should be cleaned and dried to remove any oil or product residue.

### 02. Assess

Visually inspect tooling for signs of obvious damage and establish if maintenance is required.

### 03. Repair

Repair allows the user to rectify any damage to the tooling before polishing.

### 04. Measure

Measuring is essential after repair to ensure that critical tooling dimensions have stayed within tolerance.

### 05. Polish

Polishing results in a smooth mirror finish.

### 06. Lubricate

Lubrication is important to protect, preserve and aid the smooth operation of tooling.

### 07. Store

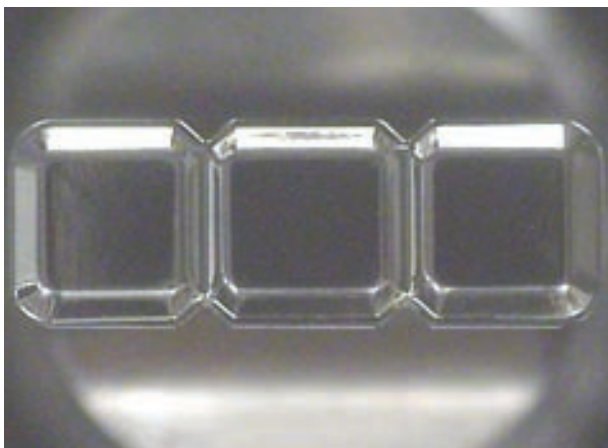
Storage cabinets should maximise security, safety and minimise damage of tooling during transportation.

“85% of punch and die problems and damage can be conclusively traced back to poor handling and after-care procedures.”

## Quality assurance

I Holland is a ISO 9001 registered company, audited twice per year to re-confirm our position as a supplier of quality products and services. All areas of the business are audited including manufacturing systems, training, purchasing, despatch, sales and marketing & customer support. We adopt the ISO standard proudly and use it as a benchmark for setting standards across our business systems and processes. I Holland also carries out annual supplier audits on all of its external suppliers. In addition, over 30 audits per year are typically carried out across internal departments of our business ensuring quality remains at the heart of our product offering.

Every product leaving the I Holland factory undergoes a 100% quality inspection. Each authorised punch tip is recorded before the product leaves the factory, at 40 x magnification, giving you the assurance that a quality product has been despatched.



## PrimePac® patent pending

In line with I Holland's philosophy of continuous improvement we have developed a unique packaging solution to ensure our products arrive at their destination in perfect condition. PrimePac® tubes have been specially designed with a 'safety zone' to hold tablet punches in position to eliminate the potential for damage to punch tip faces during transit.



## Our core capabilities in summary

I Holland has built a reputation for excellence by consistently building on the quality and breadth of our services. Our clients worldwide not only come to us for innovative tooling solutions but also for the high level of technical support, advice and specialist training. Our expert designers are regarded amongst the world's best and work closely with clients to optimize existing designs and develop new ones. Through TSAR=Predict, we were the first to introduce a clever way of forecasting the correct anti stick PharmaCote® coating solution for a particular formulation. Our hugely popular residential and on-line training seminars are always in demand by

industry professionals and our experts regularly speak at numerous seminars throughout the globe. We also set the standard on how to resolve troublesome production issues and our range of informative publications are available upon request. Plus, with good maintenance regimes, of fundamental importance to high productivity, our PharmaCare® 7 step process is a professional approach to planned maintenance and punch and die storage. Naturally, I Holland backs up all our products and services with a quality assurance that's second to none. So, when we say "The evolution of science and service", you can see that we really mean it.



## Serving you locally

We support our customers in over 90 countries worldwide and have representatives covering the following territories:



- |                   |            |            |             |                 |           |
|-------------------|------------|------------|-------------|-----------------|-----------|
| Algeria           | Czech Rep. | Iran       | Malawi      | Rep. of Ireland | Taiwan    |
| Argentina         | Demark     | Iraq       | Malaysia    | Romania         | Thailand  |
| Australia         | Egypt      | Ireland    | Mexico      | Russia          | Turkey    |
| Bangladesh        | Estonia    | Israel     | Montenegro  | Saudi Arabia    | U.A.E     |
| Bolivia           | Finland    | Italy      | Morocco     | Serbia          | Ukraine   |
| Bosnia            | France     | Japan      | New Zeland  | Singapore       | USA       |
| Brazil            | Georgia    | Jordan     | Norway      | Slovak Rep.     | Venezuela |
| Bulgaria          | Germany    | Kazakhstan | Pakistan    | Slovenia        | Zimbabwe  |
| Canada            | Greece     | Kuwait     | Palestine   | South Africa    |           |
| Chile             | Hungary    | Latvia     | Philippines | South Korea     |           |
| China / Hong Kong | Iceland    | Lebanon    | Poland      | Spain           |           |
| Columbia          | India      | Lithuania  | Portugal    | Syria           |           |
| Croatia           | Indonesia  | Macedonia  | Puerto Rico | Sweden          |           |



### I Holland Limited

Meadow Lane, Long Eaton, Nottingham NG10 2GD England.  
T: +44 (0)115 972 6153 F: +44 (0)115 973 1789  
E: [info@iholland.co.uk](mailto:info@iholland.co.uk)  
[www.iholland.co.uk](http://www.iholland.co.uk)

As a BS EN ISO 9001:2008 registered company, we have total commitment to ensuring all our punch and die products and services are manufactured and supplied to the highest possible standards. I Holland Ltd reserve the right to alter the equipment specifications as may be required.

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