PR1000

INDUSTRY PROVEN
Small Scale Production Tablet Press

PTK
The frontiers of New Technology!

Pharmaceutical | Nutraceutical | Confectionery | Chemical

A Trusted Pharmaceutical Manufacturer

For more than a decade PTK Co. have served the Pharmaceutical and Nutraceutical industries of Europe and Worldwide.

All PTK machinery is manufactured using world renowned, branded components and ingenious design, in their modern purpose built manufacturing and design facility.

As a ISO:9001 certified company, all PTK machinery is closely controlled during manufacturing by the in house Quality Control Department, and all machinery is independently CE certified.

PTK machines are validated, and situated around the world, so meeting global regulatory demands of machine build quality and software compliance, are a prerequisite in a rigorously controlled industry.
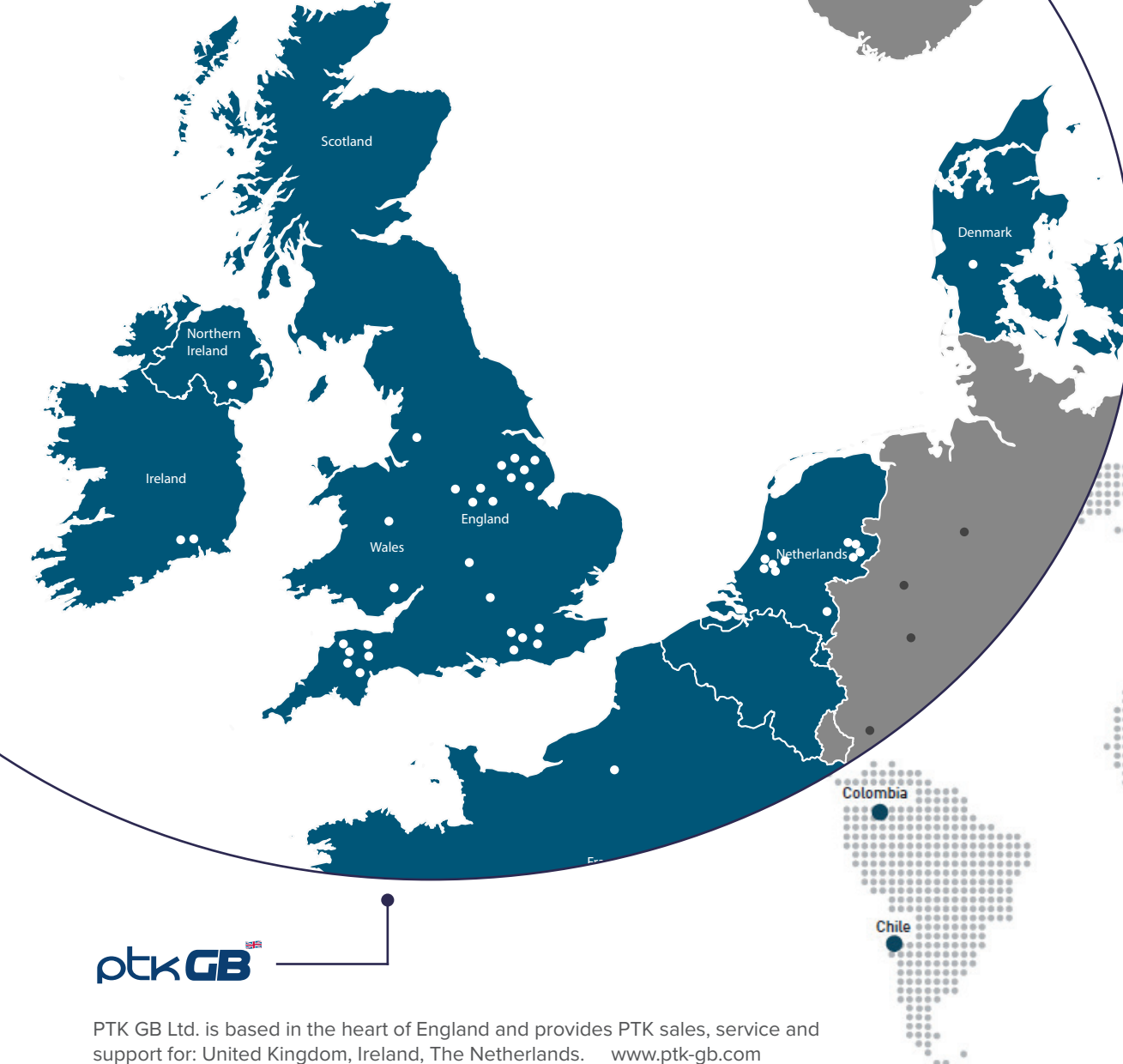
For bespoke projects, the design team are on hand at the project management stage to integrate the machines seamlessly to site systems or automation.

PTK Co. www.ptk4u.com

GLOBAL SUPPORT
32 Agencies Worldwide

PTK GB Ltd. is based in the heart of England and provides PTK sales, service and support for: United Kingdom, Ireland, The Netherlands.   www.ptk-gb.com

Supporting our European Clients - *PTK GB Ltd. is an official partner of PTK Co.*

PTK Tablet Presses have been successfully installed, serviced and supported in the UK, Ireland and The Netherlands for other a decade, with PTK GB Ltd. helping many clients run challenging products in the pharmaceutical, nutraceutical, confectionery and chemical industries.

Support at a global scale

PTK Co. head office and manufacturing plant is located near Seoul City, South Korea and has developed a network of over 32 different agencies worldwide, ensuring that all local customers get the products and after sales service they need.

PR1000 Production Tablet Press

180,000 tablets per hour - Single sided

With its compact design the PR1000 is a very attractive solution for companies looking to maximise production space and maintain performance and output. Designed for small scale production it features a fully automatic tablet weight control system, full cam monitoring, complete batch reporting and auditing through PTKs HMI software.

PR1000
Fully automated, high performance single sided small scale production tablet

PRODUCT FEATURES

180,000 tablets per hour

30Kn Pre and 70Kn Main compression

Automatic tablet weight regulation and single tablet reject at full speed

Upto 18.00mm filling depth (EUD)

Excellent price to performance ratio

Supported by UK service engineers for over 15 years

Reference sites - multiple United Kingdom, European, world wide customers

World Renowned Brands - Siemans, Omron, Festo, SMC, Schneider, Proface

Software compliant to 21 CFR part 11

Excelling in supporting our clients for over 15 years.

Technical Data

Number of stations	16	19	23	25	
Punch Type ** (EU / TSM)	D	B	BB	BBS	
Main Compression Force Kn	70	70	70	70	
Pre Compression Force Kn	30	30	30	30	
Tablet Output per hour	96,000	136,800	165,600	180,000	
Fill Depth (mm)	18.00	18.00	18.00	18.00	
Tablet Thickness (mm)	8.5	8.5	8.5	8.5	
Tablet Diameter (mm)**	25.00	16.00	13.00	11.00	
Upper Penetration (mm)	1-4	1-4	1-4	1-4	
Turret Speed (rpm)	100	120	120	120	
Machine Dimensions (mm)	900 x 750 x x1640				
Cabinet Dimensions (mm)	700 x 650 x 1802				
Supply voltage	220 / 415 Vac 3ph 50/60hz				
Certification	CE as standard on all machine				

- Punch Formats available in EU, TSM**
- EUD to BBS Die sizing available**
- Mobile HMI with 19" Touch Screen
- Software compliant to 21 CFR part 11
- 70kn Main compression force
- 180,000 tablets per hour
- Automatic tablet weight regulation

NB Actual tablet output and maximum compression forces are dependent on presses material and punch specification.

Features

Advanced Product Management

- Store ALL Product Specific machine settings in the "Products Menu". (from feeder speed, lubrication timings to roll position and weight regulation settings for that tablet).
- Unlimited storage of products and parameters
- Full reporting & Audit trail

Full Automatic Weight Regulation

- Fully automatic weight regulation and single tablet reject at full speed ensures excellent weight conistency.

- This process is fully validated and tested on your products during installation.

High Speed Production

- 180,000 tablets per hour.
- Precise engineering and software control yield high speed production with real time graphics and reject controls
- PTK developed powder handling from hopper to feeder, to uniformly present powder without separation, aeration or bridging to deliver homogeneous product at the fill point.
- Use our tooling expertise to unlock the potential of Multi Tipped Punch production for greater yields.

70KN Main Compression Force 30Kn Pre

- With monitoring controls, the machine is self protecting and robust to give uninterrupted service in the most challenging of environments.
- Many reference sites have been using PTK machines in challenging environments giving us a proven track record in harsh environments.
- Pre compression 30Kn, Main Compression 70Kn.

Full Cam Monitoring

- Upper Punch Tightness
- Lower Punch Tightness
- Ejection Force
- Punch loading station
- Fill cam depth sensor
- Temperature monitoring (optional)

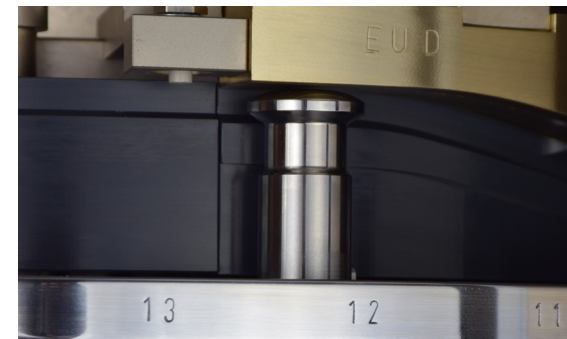# Punch & Cam Monitoring
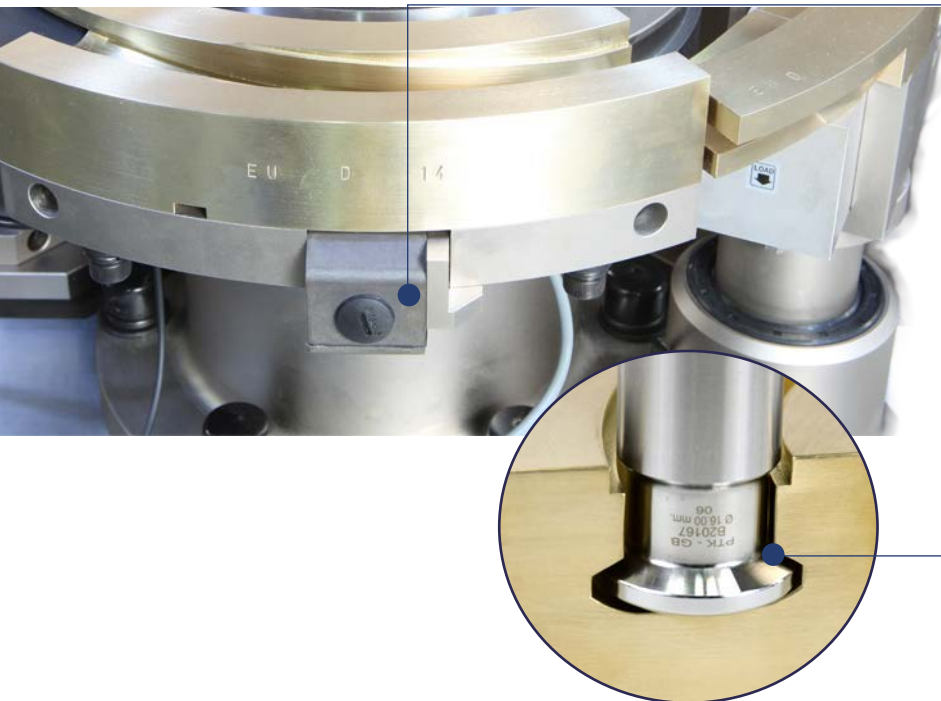
Punch Cam Monitoring

- Precision engineered cams in a choice of materials to best suit client powders
- Fill cam depth up to 22mm monitored by sensor switch under cam
- Weight Rail cam and load cell monitors lower punch tightness as well as controls tablet weight from central weight control system
- Ejection cam and load cell monitors ejection forces.
- Punch loading section - empty cam sensor
- Upper punch tightness cam monitoring

Safety Monitoring

- Upper Punch Tightness
- Lower Punch Tightness
- Ejection Force
- Punch loading station
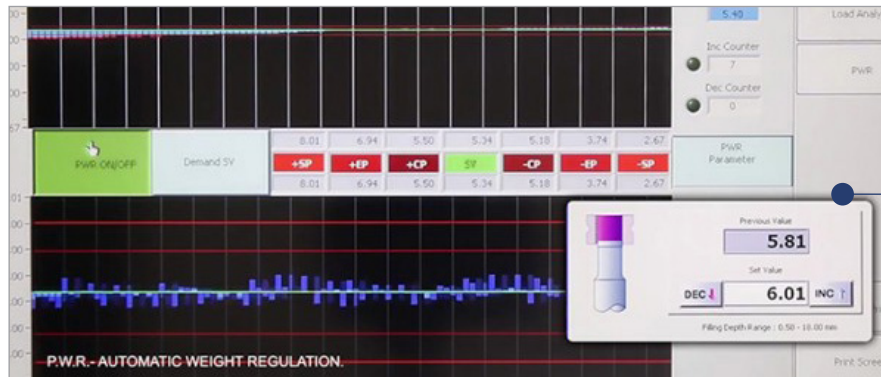- Fill cam depth sensor
- Temperature monitoring (optional)

Punch cam monitoring
Upper punch tightness cam is one of many monitoring and safety features.

1. P.W.R™ Automatic Tablet Weight Control Software

2. Angled Paddles

3. Flat Paddles

4. Round Paddles

5. Bronze inserts .

6. Zero clearance inserts

7. Powder Transfer Units

Advanced Powder Control

Using both the P.W.R™ weight regulation software and comprehensive powder control hardware, PTK tablet presses make it easier to overcome problematic powder flow and ensure correct die filling and tablet weight consistency.

P.W.R™ Software: (weight regulation software)

1. Using P.W.R™ software to see poor powder flow - poor powder flow can be easily identified by high and low peaks on the live graph in Kn (+/-). Operators can make tablet press changes and see the resultant graph pattern.

Good flowing powders will result in a smooth graph with small +/- in Kn.
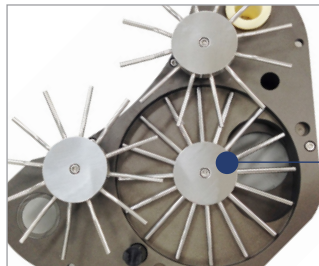
See results of:
- Increase press speed to flatten graph
- Increase / decrease feeder paddle speed
- Change in feeder paddle formats
- Change in feeder height
- Effects of hopper powder level and downward force
- Optimise powder transfer low levels
- Effects of new powder batches

Feeding Hardware:

2. Angled Paddles - fluffy / light powders can be directed down towards the die bore

3. Flat Paddles - good flowing powders

4. Round Paddles / Spider Paddles - powders prone to bridging in feeder, or to reduce feed for fast flowing powders

5. Bronze Inserts - cost effective removable inserts to protect turret surface

6. Zero Clearance Inserts - very clean running, lower powder loss, good flowing powders

7. Powder transfer unit - maintain consistent powder pressure and flow rate through out the powder flow cycle. Hopper > Down Tube > Feeder chambers > Die Bore Filling.

8. Hopper agitators / In Line butterfly valves

9. Bespoke hopper angle designs

Automatic Tablet Weight Control

P.W.R™ Independent Weight Control

PTK's automatic weight regulation software called P.W.R is designed to automatically control and adjust the tablet weight through weight rail movement, based on compression force monitored by load cells. Non conforming tablets are automatically rejected and can be configured to reject a single or group of tablets.
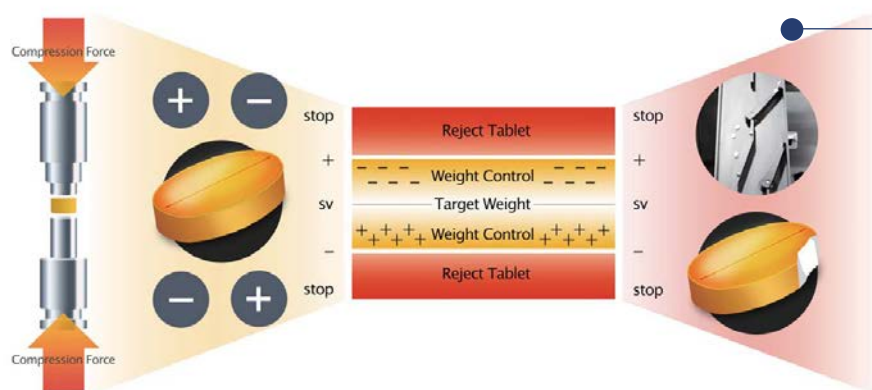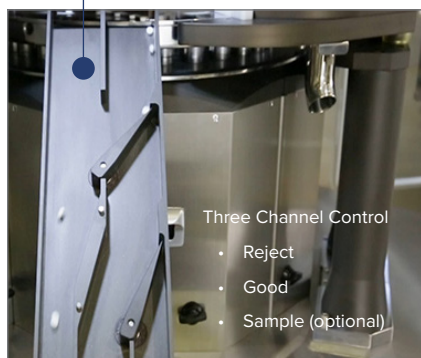

P.W.R™ Tablet Control

Single Tablet Reject At Full Speed

• Run the press at its output limits at all times, safe in the knowledge it is self policing with automatic weight regulation and single tablet reject control
• At a glance, clear and intuitive graphics show machine condition and reject status
• An intricate alarm structure safely flags production issues
• Control tablet uniformity by tightening control parameters as required

Tablet Control

• 3 channel system for handling Good, Reject and Sample tablets.
• Reject - out of specification tablets when weight regulation is turned off.
• Good - middle channel to de-duster
• Automated with the weight regulation system to ensure 100% of tablets entering the good stream are monitored
• Equipped with sensors to check gate positions and ensure rejects do not enter the good tablet stream
• Sampling gate can be run manually or at timed intervals

Three Channel Control
• Reject
• Good
• Sample (optional)

Non conforming tablets automatically rejected at high speed.

Software Operation
Total product control and auditing

The PR1000 benefits from a large 19 inch multiple touch screen based system designed for efficient operator use. All system controls are based on industry know PLC and software design, offering Omron systems PLC and Windows embedded platform. The result is an extremely robust and reliable system which can be supported both on site or remotely.

SOFTWARE FEATURES

CFR Part 11 compliant secure software.

Primary screen - feeder speeds, fill depth, roll positions, turret speed, tablet counter, load cell viewing, product naming...

PWR Screen - automatic weight control for single tablet reject, Real time Kn readings for Pre/Main, Individual punches, punch safety Kn settings.

Real Time Load Monitoring and safety limit setting - Shows real time Kn graphs for compression rolls, upper / lower punch tightness and ejection cam forces.

Secondary screen - (auto lubrication, removable turret change, de-duster on/off, tablet sampling, low level powder sensors, powder loading options, in-flow agitator option, temperature monitoring option.*

Product Section- save and recall all saved products, print product setting / reports, automatic product load button sets up the press with just one button.

Safety Section - shows all machine alarms, in depth description of alarm and action to be taken. Also shows full alarm status and history.

Reports / Audit - operator log on, Machine settings change, Safety alarm reports, weight control reports showing every tablet compression. PR2000 reporting is comprehensive and records and saves every element of machine usage. All data can be examined weekly, monthly or yearly to compare data, troubleshoot problematic products or be used for audit purposes.
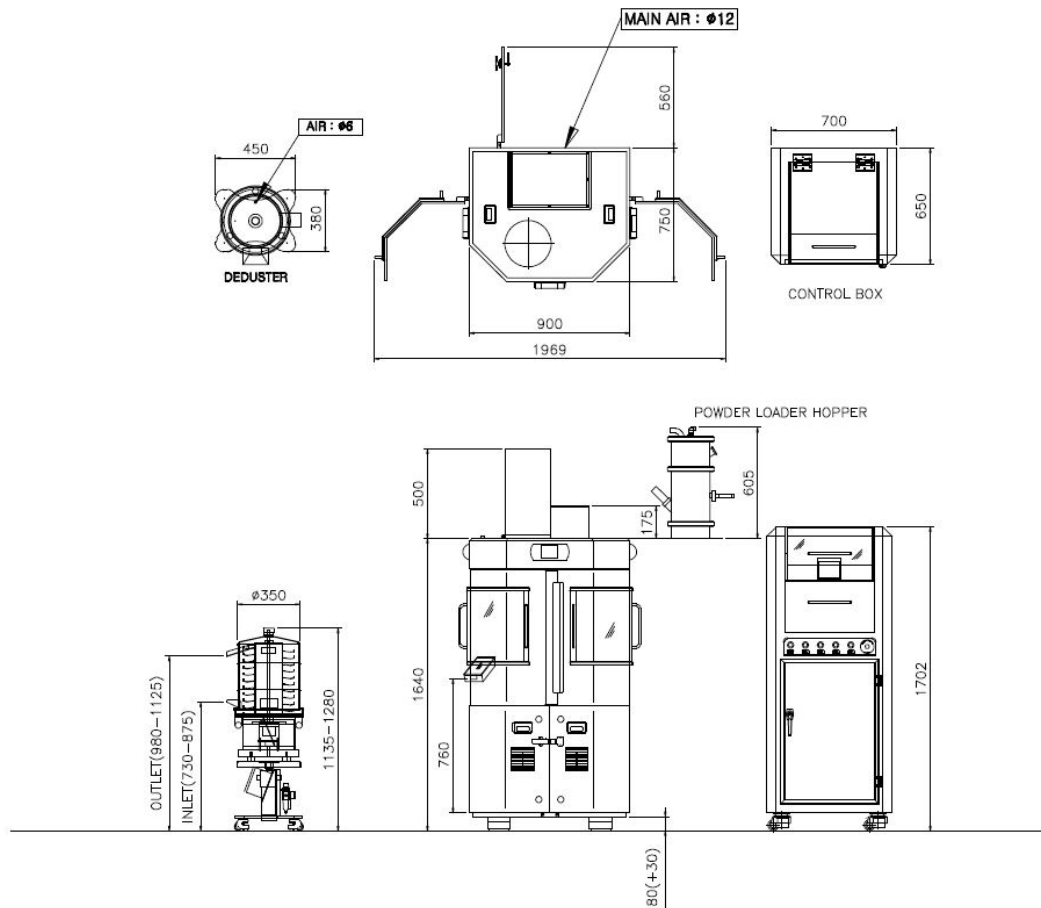
User / Group Security / Management Level Screen - define multiple secure levels of machine access for setup operators, senior engineers.
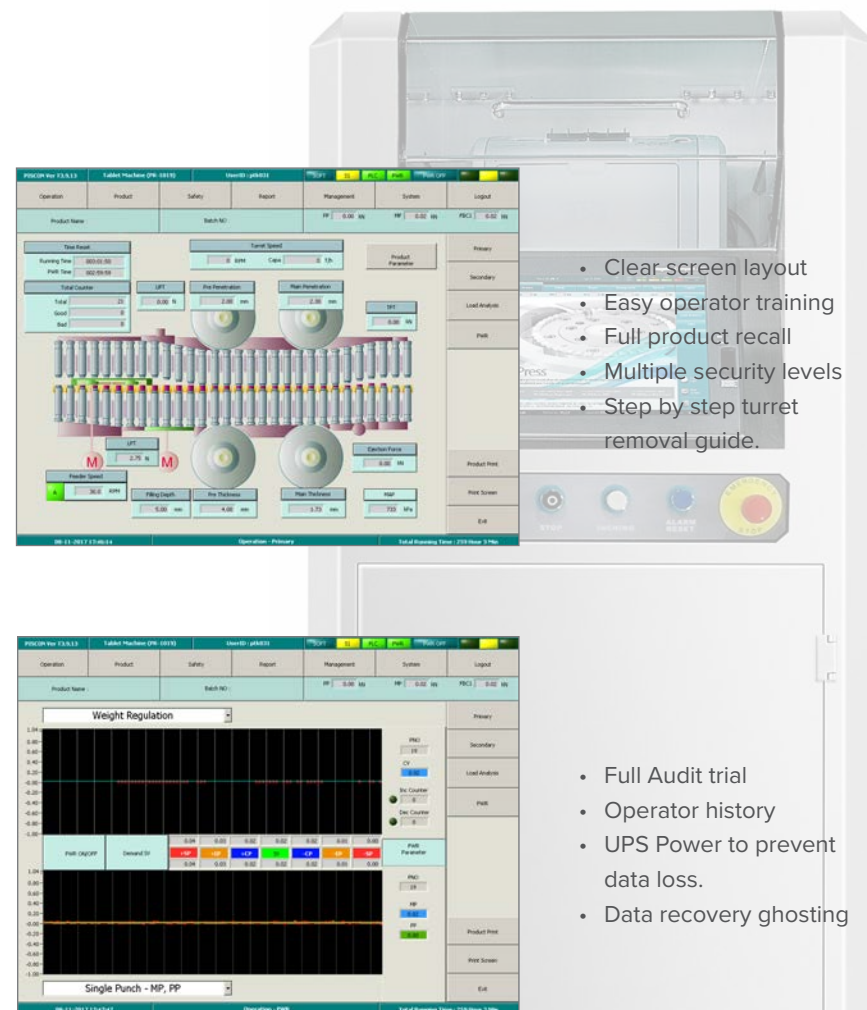
- Clear screen layout
- Easy operator training
- Full product recall
- Multiple security levels
- Step by step turret removal guide.

- Full Audit trial
- Operator history
- UPS Power to prevent data loss.
- Data recovery ghosting

Layout

PR1000
Machine Layout

400/440/480 V – 50 – 60Hz

Optional Items

Powder Loader Hopper
Compact space saving built in powder loader, operates in the same way as the standard powder loader, by using the vacuum transfer method. Timing controlled by tablet press software.

IFH
IFH is useful for where powders require additional agitation prior to entering the powder feed tube.

Open Feeder
For good flowing materials or applications where a mechanical feeder is not suitable i.e. segregation problems, special matrices or short runs.

Powder Loader
Vacuum transfer system supplies the powder automatically to the main hopper on the tablet press from floor level.

OEE Software
Monitor real time efficiency performance

See live batch progress

Collate efficiency data for off line evaluation

Inform operators of their real time performance focussing their attention on 'Up Time'

Fully compatible with Network and SCADA systems

Dust Collection & Transfer
PTK GB - UK Agent for Kevac vacuum systems. Vaccums & Powder transfer systems

Process Analytical Control (PAT) Technology
Output tablet samples for automated Near Infrared Spectroscopy (NIR) sampling Integrate with automated test systems to check weight hardness, thickness and feedback to the press to override the machines primary control settings.

PTK's in house Software Engineers facilitate all up/downstream integration as part of the project process

Tablet Compression Tooling
PTK GB - 25 years experience in tablet compression tool manufacture, steel selection, tablet design and problem solving.

PROVEN PRODUCTION MACHINERY

Tablet Presses

Capsule Fillers

Coating Systems

High Shear Mixer Granulator

Fluid Bed Dryer

ptk
The frontiers of New Technology!

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