

PR2000

INDUSTRY PROVEN
Production Tablet Press



ptkGB  **CLIENT BROCHURE**
Official PTK Partner

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.

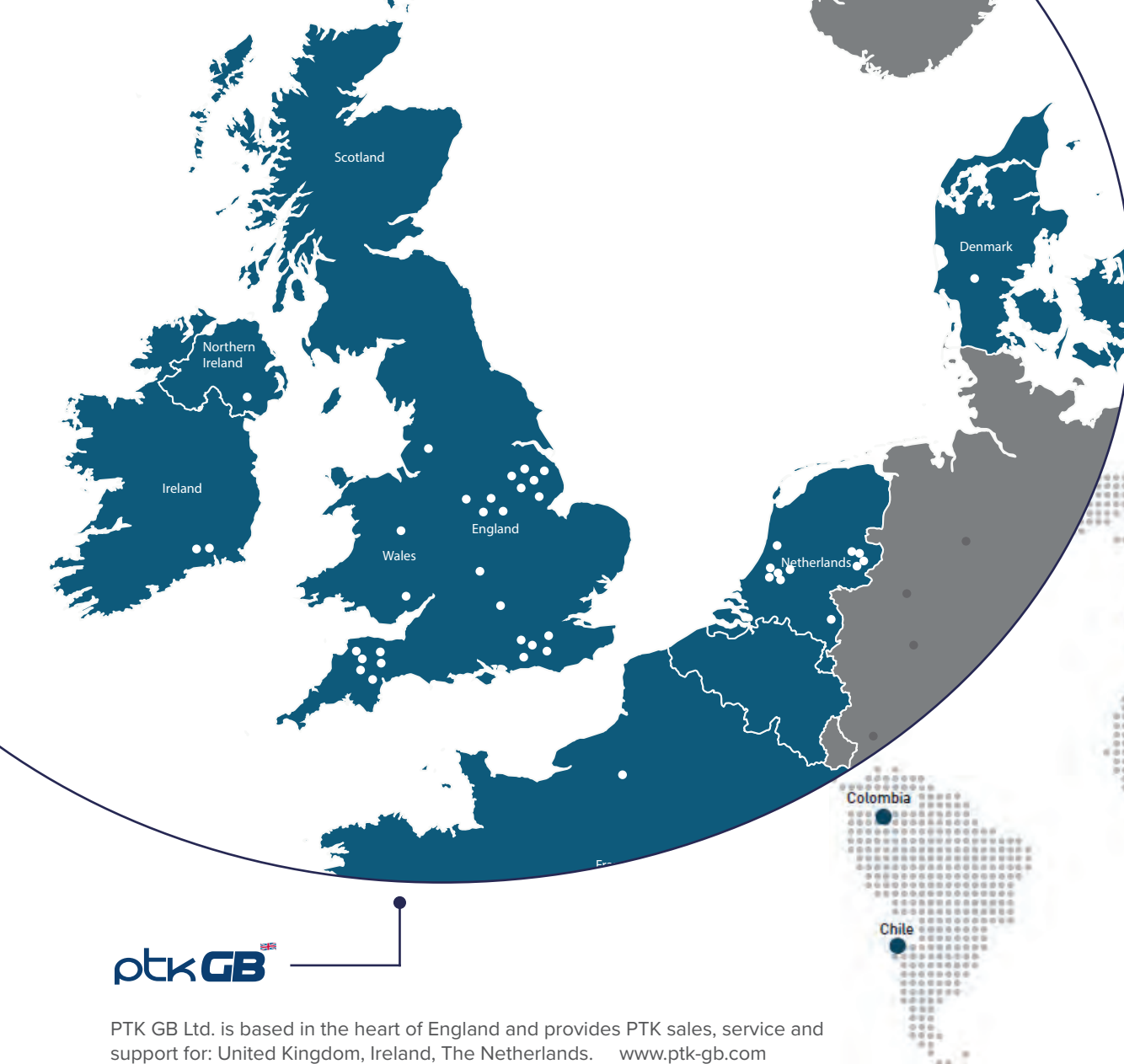
For bespoke projects, the design team are on hand at the project management stage to integrate the machines seamlessly to site systems or automation.

PTK Co. www.ptk4u.com



GLOBAL SUPPORT

32 Agencies Worldwide



ptkGB

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 over 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.

PR2000

Production Tablet Press

PTK PR2000 Production Tablet Press

282,000 tablets per hour - Single sided

PTK'S continuous improvement program has yielded an interchangeable turret tablet press, that stands toe to toe with its European rivals at a much more palatable cost.

See why this "Robust, Cost-Efficient" tablet press has been such a success in helping cost conscious clients move away from older machinery unlocking the potential of high speed production.

The PR2000 has been designed to increase production outputs through both its patented streamlined automatic weight regulation software and advanced turret removal system featuring a unique complete cam and tooling removal.

PRODUCT FEATURES

282,000 tablets per hour

Removable turret - 30 minutes Turret change

Soft start Punch Protection technology

100Kn Pre and Main compression

Automatic weight regulation and single tablet reject at full speed

Quick Product Setup - product recall auto movement of rolls, weight rail.....

Excellent price to performance ratio

Next Day on site support - supported by UK service engineers for over 10 years

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

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

Software compliant to 21 CFR part 11

Up to 14.00mm tablet thickness - EU35 Tooling

PR2000

Fully automated, high performance single sided production tablet press



Technical Data



Number of stations	22	29	36	43	47
Punch Type ** (EU / TSM)	EU35	D	B	BB	BBS
Main Compression Force Kn	100	100	100	100	100
Pre Compression Force Kn	100	100	100	100	100
Tablet Output per hour	132,000	174,000	216,000	258,000	282,000
Fill Depth (mm)	22.00	18.00	18.00	18.00	18.00
Tablet Thickness (mm)	14.00	8.5	8.5	8.5	8.5
Tablet Diameter (mm)**	34.00	25.00	16.00	13.00	11.00
Upper Penetration (mm)	1-4	1-4	1-4	1-4	1-4
Turret Speed (rpm)	80	100	100	100	100
Machine Dimensions (mm)	1190 x 985 x 1860				
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**
- Fixed or removable turret options
- BBS to EU35 Die sizing available**
- Mobile HMI with 19" Touch Screen
- Software compliant to 21 CFR part 11
- 100kn compression force
- 282,000 tablets per hour
- Automatic weight regulation

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

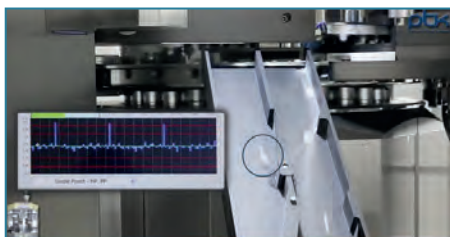
Features

Automated Product Setup

- 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).
- One Button Setup - Re-call stored Products and the machine will drive itself to the ready position saving set up time and reducing risk of human error
- Unlimited storage of products and parameters

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



High Speed Production

- 282,000 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.

100KN Compression Force at Full Speed

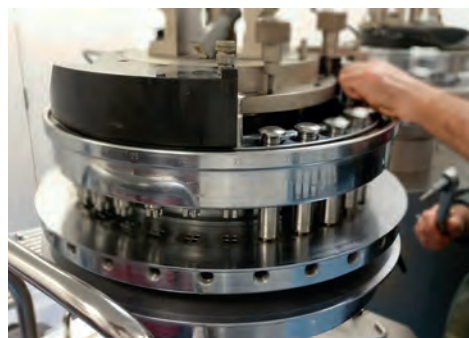
- Strength in design, quality components and high speed monitoring allow PTK presses to make tablets at up to 100KN even at high speeds.
- With monitoring controls, the machine is self protecting and robust to give uninterrupted service in the most challenging of environments.
- Many reference sites have been using PTK machines in challenging environments giving us a proven track record in harsh environments.
- Pre compression 100Kn, Main Compression 100Kn.

True Unmanned Operation

- Allow the press to modulate itself to maintain perfect tablet weight.
- Reject single out of specification tablets at high speed.
- Auto sample at programmable intervals
- The HMI system records all production data and setting changes for 100% traceability.
- With automated on line hardness and thickness checks - go 'lights out' and manufacture in the most efficient way.
- With over 50 alarm parameters, the PR2000 is a trusted machine to stay 'home alone'.

Removable Turret Technology

PTK's quick removable turret design ensures smooth repeatable turret change time after time.



Offline turret preparation

can substantially reduce product change over times and enable better access to the complete turret for cleaning and maintenance.



Soft start technology

helps protect your investment in tablet compression tooling. This feature can be turned on or off when necessary.

“One of the fastest full turret and product change overs in the industry”

Removable Turret Technology

- Select the most efficient tooling configurations and maximise output with removable turrets and change over within 30 minutes
- Retains all punches in the turret for offline turret preparation
- Future proof's the machine, makes change over faster, cleaning easier, and maximises machine up time
- PTK's precision turret coupling ensures repeatability of less than ½ the thickness of a human hair

Punch Protection - Soft Start Control

- To combat punch overloading when accelerating or decelerating to and from high speed, the machine rapidly relieves pressure until full operating speed is achieved.
- The machine will only accept good tablets and controls variations on machine start and stop
- This function is selectable so only used when necessary

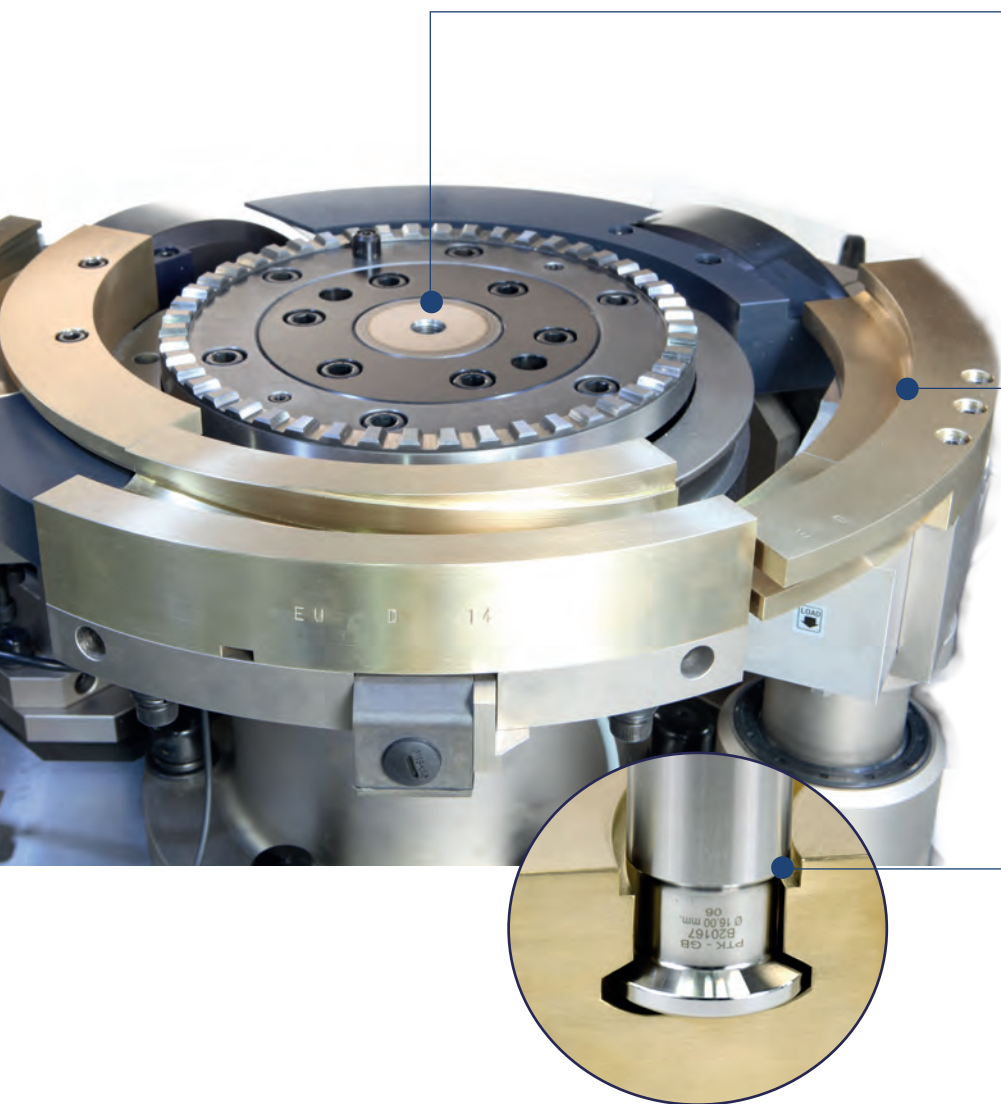
Increase the number of products you can make on any one machine

- Turrets are available in multiple formats and station numbers to suit your current tooling requirements or future proof your production capabilities
- EU / TMS B, BB, BBS, D, EU35 or more.....



Precision Coupling

PTKS precision coupling ensures optimal turret balance and drive time after time!



Precision Coupling

- A hardened precision coupling is used to connect the machine to each turret
- Ensures repeatable turret re-location to hundredths of a millimetre
- Eliminates wear and vibration due to direct opposing lock of turret to machine
- Allows complete accuracy of the turret's rotary position at all times

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.

Advanced Powder Control

Using both the P.W.R.[™] weight regulation software and comprehensive powder control hardware, the PR2000 makes it easier to overcome problematic powder flow and ensure correct die filling and tablet weight consistency.



1. PR2000 P.W.R.[™] Automatic Tablet Weight Control Software

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.

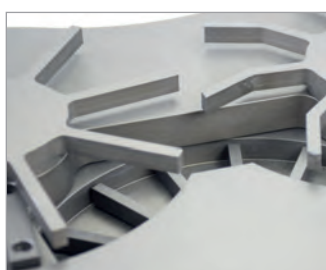
Good flowing powders will result in a smooth graph with small +/- in Kn.

See results of:

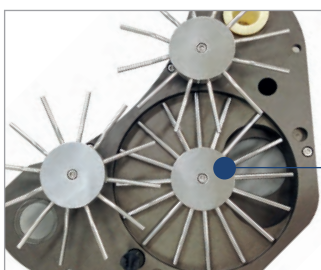
- Increase press speed to flatten graph
- Increase / decrease feeder paddle speed
- Change in feeder paddle formats
- Change in feeder height
- Effects of hopper powder level and downward force
- Optimise powder transfer low levels
- Effects of new powder batches



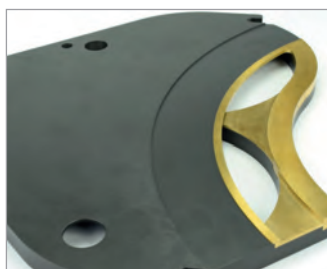
2. Angled Paddles



3. Flat Paddles



4. Round Paddles



5. Bronze inserts .



6. Zero clearance inserts



7. Powder Transfer Units

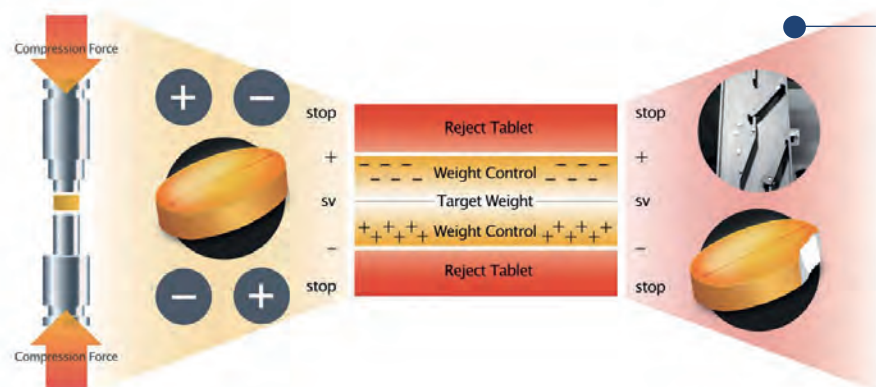
Feeding Hardware:

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 throughout 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

The PR2000 weight regulation software 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 PR2000 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.

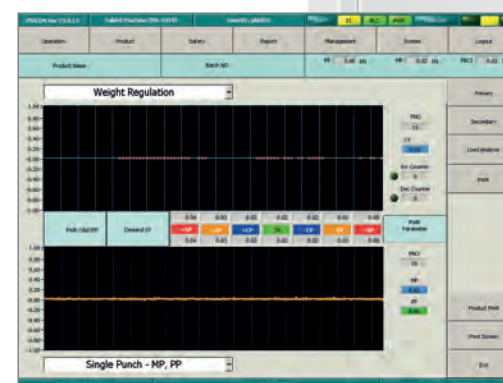
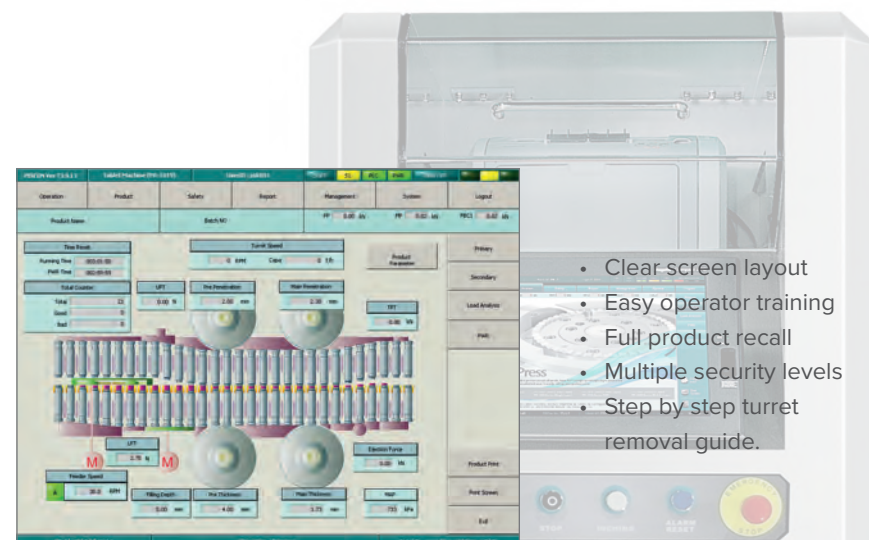
Secondary screen - (auto lubrication, removable turret change, de-duster on/off, tablet sampling, low level powder sensors, powder loading options, in-flow agitator option, temperature monitoring option.*

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.

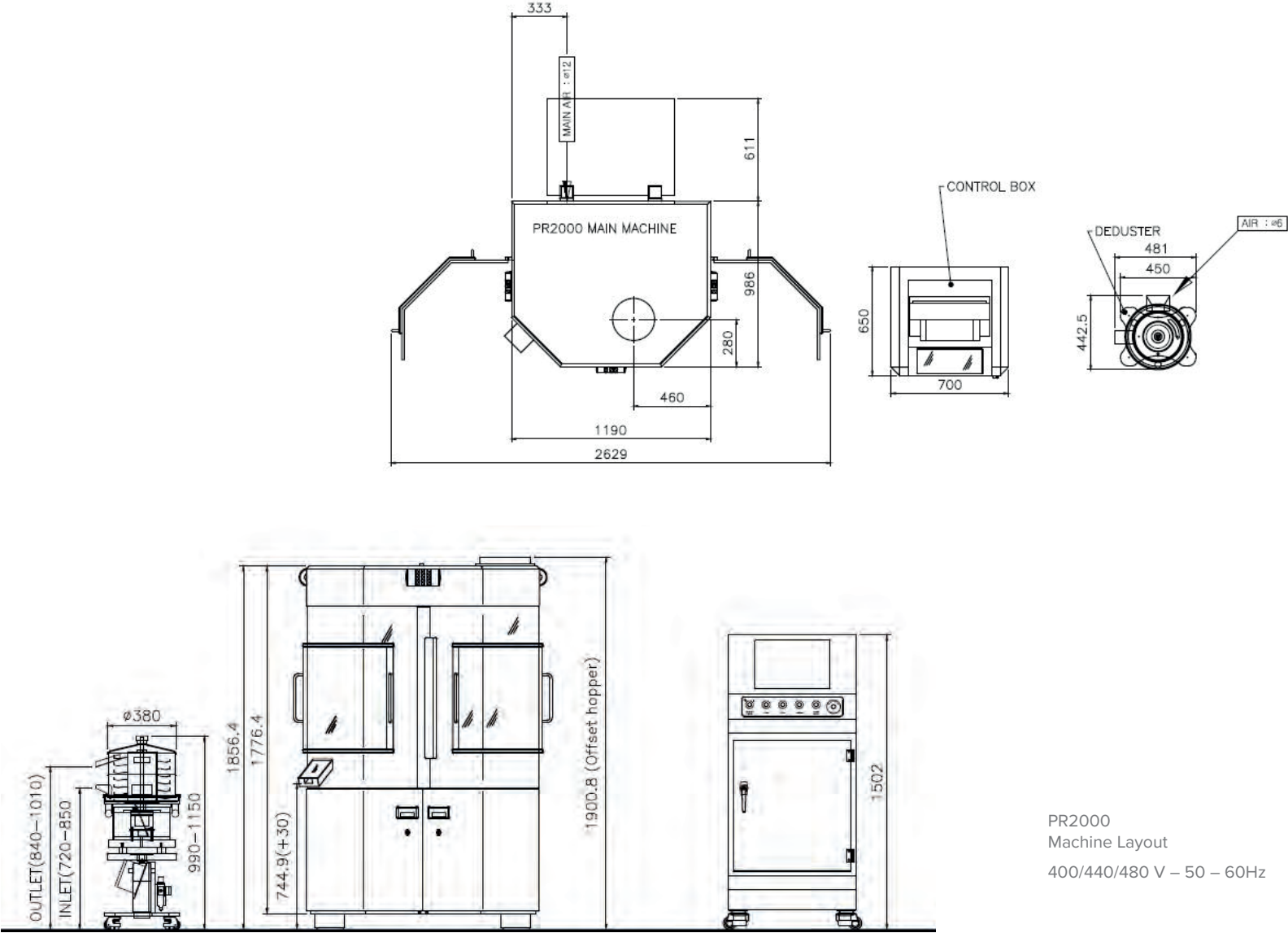
User / Group Security / Management Level Screen - define multiple secure levels of machine access for setup operators, senior engineers.



PR2000

Production Tablet Press

Layout



PR2000
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.



Open Feeder

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



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



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



IFH

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



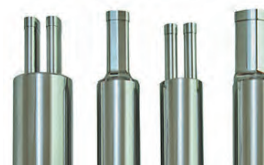
Powder Loader

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



Dust Collection & Transfer

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



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





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