

Single Rotary Tablet Press LP III Instrumentation



SPECIAL FEATURES LP – III:

- The speed of the Turret is adjustable through ACVF variable drive system.
- The Speed of the Force feeder Adjustable with A.C.V.F. Variable drives system.
- All Electrical Controls on Touch Screen.
- Excellent accessibility for quick cleaning and product conversion.
- Turret – Central drive Mechanism with Powerful Gearbox.
- Three piece turret.
- Machine with Pre-Compression.
- Dust Suction Nozzle Arrangement.
- Tablet Thickness & Weight adjustment controls outside compression zone.
- All critical parts made in CNC machines.
- Totally enclosed. GMP model.
- All Fasteners are of SS 304.
- All Guards magnet catch with Stainless steel Covers.
- All Bakelite Knobs Fixed with stainless steel threaded studs.
- Lower cam track can change without lifting Turret & no need of any setting.
- Charging Hopper with Powder Level window and material stop Cock facility.
- Turret Guard with full height to cover wiper seal area.
- Utilizes “TSM” or “EU” “B”, “D” and “BB” standard tool configurations.
- Lower roll carrier Oil tray with SS 304 material.
- All Electrical Components are CE approved.

- Lower Punch Wiper seal with NT6/a is an Acrylonitrile Butadiene Rubber of Hardness Shore 'A' 88°, Temp range 40°C to 100°C, surface roughness static – 0.8 µm with corrosion resistant metal ring houses NBR element for smooth Lower punch operations.
- Minimum 2 mm thickness tablet can be press.
- Bottom Plate inside/outside Cladded with SS 304.
- Turret & Cam Tracks Processed by Electrode less Nichol Plated (ENLP) for Long life.
- Special R & D Purpose machine with Combined “B”, “BB” & “D” Tooling available.
- Pressure Roller & Pins are processed with hard heat-treatment.
- Low noise level.
- Upper guard & Lower side guard interlocking for operator’s safety.
- Miniature Circuit Breaker for over load Protection as a Safety Feature.
- Electrical voltage & frequency can be provided as per customers requirements.

SHAKTI Lab Press Control System Overview

Tablet Press Control System works force based press control system that utilizes feedback of measured compression peak force value to continuously adjust die fill level and thus compression force. It establishes and maintains target compression force feedback control scheme. The press control system automatically rejects tablets that fall outside of the designated compression force limits. HMI – PLC system provide features like

- Touch Panel function for hassle free operation
- Recipe Management covers following information
 - Recipe number (Automatic Generation in sequence)
 - Recipe code
 - Tablet Parameters like
 - Product Name
 - Product Code
 - Product Size
 - Product Shape
 - Product Weight
 - Product Thickness
 - Product Hardness
 - Machine Parameter like
 - Machine Speed RPM
 - Feeder Speed RPM
 - Applied Pressure
 - Die fill depth
 - Control Parameters like
 - Target Compression force limit
 - Die fill control Upper / Lower limit
 - Tablet Rejection Upper / Lower Limit
- Batch Management cover additional parameters like
 - Operator Code
 - Batch Start Time
 - Batch Size in Nos. of Tablet
- Load cell software calibration
- Advance sensor diagnostic
- Advance actuator diagnostic
- User Password Management
- On demand Report generation Management for
 - Batch
 - Recipe
 - Alarms

Tablet Press Control System with Fully Automation:

SHAKTI has sound expertise in tablet press machine automation using Real Time high speed data acquisition system. Rotary Tablet Presses can be equipped with Automatic Control / Monitoring Systems offered by our Automation, ranging from a simple PLC to a fully automatic System.

- Machine Start / Stop Controls
- Machine Speed Control
- Feeder Start / Stop Controls
- Powder Feeder Speed Control
- Tablet Batch Counter Control
- Alarm Popup for different preventive actions

Multi Level Password Protection

- Password Protected authorized access to govern all major activities.
- User Control Module to allow multiple sessions of Add / Edit / Delete functions.
- Logoff User after a period of inactivity
- Fail password logons trigger audit trail
- Password aging feature

Alarm History Management

- Machine Alarm monitoring with Alarm occurrence and Acknowledge Time Stamp for selected duration.

Idle Time History Management

- Machine Idle Time Logging with Machine Stop Time, Start Time and reason selected by the operator to stop the machine for selected duration..

Idle Time History Management

- User can add any events related to maintenance or any parts change due to breakdown or while preventive maintenance and will be logged with time stamp and user name.
- Graphical Interface with touch screen capabilities
 - Displays different indicators
 - Allows different controls
 - Popup alarm screens as soon as any event occurs
 - Eliminates any need for keyboard
- Bar Plot of individual Punch Forces
 - Bar plot displays peak force of all punches for last revolution and updates every revolution
 - Also displays all upper / lower controls, alarms and rejection limits with different color code
- Record and Display Compression Force
 - Records data of each pick force corresponds to compression / hardness for each tablet or sample.
 - Archiving of Data for selected Batch when required.
- All Types of Report Generation

Advantage:

- Increase Productivity
- Reduce Product Loss
- Standardize Operations
- Minimize Batch-to-Batch Variability
- Temper Proof data
- Minimize Maintenance Cost
- Improve Quality

The tablet output depends upon the following factors.

- The Tablet output depends upon the properties, tablet shape, weight, thickness as well as quality of granules of material to be compress.

- Ambient Conditions.
- Table Dimension for customer- 850 x 760 x 620 mm ht.
- Working Area / Room size require for customer- 8 feet x 9 feet.
- Actual Output is normally 80 % of this value.

Note:

- Electric voltage & frequency can be provided as per customer's requirement to specify while placing an order.
- The rights for the modification in design & spaces are reserved without prior notice.

Optional Accessories:

- IQ, OQ, DQ Documentation & Test Certificates can provided on demand.
- Table Trolley.
- Tablet De Dusting & De burring Unit.
- Dust Extraction Unit.

Technical Specifications:

MODEL	'B' , 'BB' & 'D' TOOLING	'D' TOOLING	'B' TOOLING
No. Of Station	4+4+4=12	8	10
Tooling	4B/4BB/4D TOOLING	'D' TOOLING	'B' TOOLING
Max. Operating Load (Tons)	60 kN / 6 Tons	60 kN / 6 Tons	60 kN / 6 Tons
Pre Compression Load (Tons)	20 kN / 2 Ton	20 kN / 2 Ton	20 kN / 2 Ton
Turret Speed (rpm)	5 to 38	5 to 38	5 to 38
Force Feeder RPM	12 to 75	12 to 75	12 to 75
Output Tablets/ Hour * Min.	1200	2400	3000
Output Tablets/ Hour * Min.	9000	18200	22800
Max. Tablets Dia. (mm)	19 For "D" Tooling 16 For "B" Tooling 11 For "BB" Tooling	19	16
Max. Depth Of Fill (mm)	20	20	17
Hopper Capacity	3 Kg.	3 Kg.	3 Kg.
Upper Punch Penetration (mm)	2 to 6 mm	2 to 6 mm	2 to 6 mm
Gear Motor for Feeder (Driven through ACVF)	2 HP, 3 Phase	2 HP, 3 Phase	2 HP, 3 Phase
Main Electric Motor (Driven through ACVF)	0.25 HP, 1/3 Phase	0.25 HP, 1/3 Phase	0.25 HP, 1/3 Phase
Electric Supply	Single Phase or 3 Phase	Single Phase or 3 Phase	Single Phase or 3 Phase