

Bi Layer Tablet Press for R&D – SDL 2 PLC



Lab Press – SDL-2 is a High Tech Double Layer & Mono layer Rotary Tablet Press for R&D and small batch production. This Single sided R & D Double Layer Tablet Press fully conforms to GMP and the safety requirements, featuring versatility with a quick change of tooling. For the suitable adjustment during double – layer tablet development, fully independent weight, height and hardness system are used for both the first and second layer. The Turret is driven centrally by a motor and Reduction gear box. The turret speed is adjusted by A.C. frequency drive. It's available in Regular Model D' Tooling or B' Tooling, Multi Tooling – D+B Tooling or D+B+BB

SPECIAL FEATURES OF Lab Press SDL-2 PLC:

- 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.
- Double Compression Mechanism for Double Layer Tablet.
- Dust Suction Nozzle Arrangement.
- Tablet Thickness & Weight adjustment controls outside compression zone.
- All critical parts made in CNC machines.
- Turret Die plate & material contact parts are made of SS 316
- Outside controls for quick setting of Tablet thickness & Weight adjustment.
- Gravity feeding system for Easy charging of granules & minimum wastage of material.
- Force Feeder system for First & Second layer.
- First layer Pneumatic ejection for checking weight.
- 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 3 mm thickness tablet can be press.
- Base Plate inside/outside Cladded with SS 304.
- Turret & Cam Tracks Processed by Electrode less Nichol Plated (ENLP) for Long life.
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- 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.

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

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 SPECIFICATION:

MODEL (TOOLING)	B	D	B + D	BB+B+D
No. Of Station	11	9	5+5=10	3+3+3=9
Material Feeding system	1st Layer Gravity Feeder & 2nd Layer Force Feeder			
Max. Compression Load 1st Layer (Tons)	20 kN / 2 Tons			
Max. Compression Load 2nd Layer (Tons)	45 kN / 4.5 Ton			
Max. Tablets Dia. (mm)	15	19	19 For "D" Tooling	19 For "D" Tooling
			15 For "B" Tooling	15 For "B" Tooling
				11 For BB' Tooling
Max. Depth Of Fill 1st Layer	20 mm			
Max. Depth Of Fill 2nd Layer	8.5 mm			
Pneumatic Ejection	For Sample weight check – SHAKTI Dust Extraction Unit Required			
Sampling Device for Weight check	1st Layer by pneumatic ejection			
Turret Speed (RPM)	3 to 34	3 to 34	3 to 34	3 to 34
Output Tablets/ Hour * [max]	22440	18360	10200	6120
Output Tablets/ Hour * [min]	1980	1620	400	540
Both Hopper Capacity	1.5 +1.5 kg			
Air Pressure only for Pneumatic ejection model	4 Bar Air Pressure			
Main Electric Motor (Driven through ACVF)	3 HP, 1440 RPM, 3 Phase			
Force Feeder Motor	1/8 HP, 220v			
Electric Supply	Single Phase / Three phase			