



T A B L E T P R E S S E S

HSTP HIGH SPEED TABLET PRESSES

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LFA Machines Oxford LTD

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CAUTION.

Please read these operating instructions carefully before installation, starting up and repair. Inappropriate operation not recommended in the instructions may damage the machine or cause personal injury.

Introduction

The HSTP high speed tablet press is a major innovation in tablet pressing technology, bringing together advanced features that enhance both efficiency and safety. These include a touch screen display control panel for ease of use, an automatic lubrication system, a powder suction device for hygiene and raw material efficiency, an over pressure protection safety cut out, a forced feeding device for uniform tablet weight, a pre-pressing function for fast, high quality production, up to 100Kn of pressure and a maximum production capacity of up to 260,000 tablets an hour for the flagship HSTP-40 model.

Offering exceptional production speeds and tablet quality, the HSTP Series ranges from 17 to 40 cutting heads and is suited to use by major manufacturers in the pharmaceutical, medical, chemical and related industries.

Technical Specifications

Model	HSTP-17	HSTP-26	HSTP-40
Number of stations	17	26	40
Punch standard (EU standard)	BB	BB	BB
Max. Output(pcs/h)	78,500	120,100	260,000
Max. Main Compression Force(KN)	100	100	80
Max. Pre-compression Force(KN)	16	16	20
Max. Tablet Diameter(mm)	22	10	13
Max. Filling Depth(mm)	16	12	18
Max. Tablet Thickness(mm)	8	6	8
Main motor power	5.5	5.5	9.5
Turret Rotary speed (rpm)	77	77	108
Voltage Frequency	3Phase 380V 50HZ	3Phase 380V 50HZ	3Phase 380V 50HZ
Noise Db(A)	Less than 75	Less than 75	Less than 75
Overall size (mm) L x W x H	1000 x 1200 x 1700	1000 x 1200 x 1700	780 x 860 x 1930
Main weight (Kg)	1250	1250	1650

Installation

After unpacking, clean the machine thoroughly and coat with a thin layer of lubricating oil.

The machine must be installed using the four safety bracket set up provided, not by placing directly on the ground. Ensure that it is installed on a level surface.

Before starting the machine, check that the power supply voltage and the wiring on the wiring board in the distribution cabinet are both correct.

Check the punch plate is rotating counterclockwise. Open the left lower door, start the motor, and check the turntable drive handwheel rotates clockwise.

This tablet press must be operated at an ambient temperature of +10-35 Centigrade, and relative humidity <85%.

NOTE: The worm reducer generates heat. Leave plenty of clearance at the rear of the machine to allow it to dissipate, and install in a well ventilated place, ideally with fan cooling.

To install the dies:

Upper Punch - Open the organic glass door and remove the protection cover. The upper punch can now easily be installed or removed.

Lower Punch - Open the organic glass door, remove the discharging device, open the left hand protection board, move the lower punch block. The lower punch can now be installed or removed from underneath.

Take care to use the proper tools to loosen the pins and push the punch out.

When installing the punch, tighten the pins with a torque wrench. To protect the punch plate the wrench should be of no more than 10Nm. bottom of the feeder and the working surface of the turret is approximately 0.10 – 0.15mm (the thickness of a piece of paper.)

NOTE: For the first 30 hours of production after installing the machine, do not run it at more than 70% capacity.

Operation

Turn ON the main power switch and unlock the safety lock. Then touch the screen to enter the control menu.

Touch PARAMETER to check all systems are okay. The system now switches to the PRODUCTION PARAMETERS page, where you can monitor and adjust many of the machine's functions.

Bring up the keyboard, enter the values you require, and press ENT to confirm.

You can save particular drug formulas by entering the drug name, number and batch, touching the RECIPE ENTER key, and saving the details.

By touching the DEVICE STATUS button, you can enter device control pages to monitor and control the machine.

When ready to begin producing tablets, touch PRODUCTION.

Preparing the machine for use

Fill the raw material hopper then press FEEDING. Let the feeder run for a minute.

Set tablet weight and thickness by pressing INCREASE MATERIAL or DECREASE MATERIAL when the machine is running.

Setting the Pre-pressure

To set the Pre-pressure, open the organic glass cover. Adjust the nut (10) of the upper pre-pressure wheel, until it just touches the upper punch.

Starting the main motor

There are two ways to start operating the machine:

1. Touch the inching button; the machine will run until you release the button, then it will stop.
2. Touch OPERATION and the machine will run continuously.

Operating Adjustments

ADJUSTING THE TURNTABLE SPEED

The speed is shown on the control plate as "KT/H." It can be adjusted by pressing the up and down buttons on the control panel.

ADJUSTING THE BELT TENSION

The belt can be accessed through the left door and be adjusted left or right by 1-2cm at the midpoint of its freely moving segment. The tension can be adjusted by moving the main motor base, then carefully tightening the screws.

ADJUSTING THE POWDER SUCTION DEVICE

The powder suction device removes dust from the compression chamber. To adjust the suction, use the air flow control valve on the upper part of the suction device.

ADJUSTING HYDRAULIC PRESSURE

Different types of tablet need different hydraulic pressure settings. Press MANUAL to leave automatic control, then press the HYDRAULIC PLUS and HYDRAULIC DOWN buttons to raise or lower oil pressure. By pressing AUTO you restore automatic control, and the machine will stay within the upper and lower limits.

By touching the UPPER LIMIT VALUE and LOWER LIMIT VALUE on the control screen you can adjust these parameters by using the numeric keypad. Press ENT to confirm.

Note: The oil pressure should not exceed the maximum limit value 10MPA.

RE-INSTALLING OR DISASSEMBLING THE FORCED FEEDER

To disassemble the forced feeder:

- a. Close the lower part of the tank butterfly valve
- b. Place a clean container beneath the discharge port and open the discharge valve
- c. Press the FORCED FEEDING button
- d. Disengage the coupling from the feeder
- e. Separate the lower part of the tank connecting pipe from the feeder:
- f. Loosen the sides of the feeder locking nuts
- g. Press the handle to separate the two parts
- g. Pull the feeder level

RE-INSTALLING OR DISASSEMBLING THE FORCED FEEDER

During operation, the gap between the feeder and the punch plate should be 0.05mm. After a long period of use this gap may widen; if so, it should be adjusted and recalibrated as follows:

- a) Remove the feeder.
- b) Measure the distance between the plate and rotating table using a feeler gauge.
- c) Loosen the screws of the plate and level shoe, leaving the lantern ring down

- d) Turn the bolt left or right to adjust the plate's height
- e) Check the height again after tightening the screws.
- f) Return the lantern ring back to its place

NOTE: "GUESTBOOK" PAGE

In the Quick Select window Touch the MESSAGE BOARD button to enter the message board page. This message board is a touch type computer screen that lets you write shift change notes, and other information.

Maintenance

Periodically check the copper pads of the material collection scraper under the feeder for signs of abrasion. Minor scratches can be polished out with wet sand paper. If badly worn, they must be replaced.

Periodically clean the tablet outlet groove by loosening the upper knurled nut and opening the organic glass to clean.

Check the dies every two weeks to ensure they are not damaged, cracked or worn. If they are, replace them before using the machine.

Examine the machine every two weeks to ensure that all parts are in good condition. If they are not, replace them before using the machine.

If any unusual sound or vibration appears when the machine is in use, stop it at once and do not re-start until the cause has been established and corrected.

Avoid running the machine empty.

Lubrication

Lubrication Systems

The machine is equipped with an automatic pressure diluted oil lubrication system, and a manual dry oil lubrication system.

Oil Lubrication

The diluted oil lubrication system includes an electric pump, demultiplexing oil blocks, quantitative oiler, pipe joints and lubricant tubes. The electric lubrication pump operation time can be pre-set, to maintain a pressure of about 2.5Mpa within the metering valve. A light shows when lubrication is in progress.

In automatic operation status, the machine will activate the oil pump automatically after the pre-set number of cycles, and for the pre-set length of time.

For example, setting a Lubrication Interval of 200 laps and Automatic Lubrication time of 5 seconds means that after every 200 cycles, the pump will run for 5 seconds. It is normally set to run every 200-300 cycles.

Also press the lubrication button once early in the running cycle, or after a long stop, as the machine needs extra lubrication at these times.

This lubrication system requires #30 machine oil.

Low oil warning

When the oil level is low, an "insufficient lubrication" indicator will light up on the control panel.

Dry Lubrication

The dry lubrication system is a progressive sealed manual centre grease lubrication system, using a manual pump, progressive distribution block, lubricating oil tube and pipe fittings, and requires 00 boron nitride, high temperature grease.

Press the hand pump once or twice prior to each working shift.

Worm reducer

The oil level of the worm reducer should be checked regularly. The oil level mark is visible after opening the left door.

This oil should be changed after every 400-500 hours working time, using #460 oil in winter and #680 oil in summer.

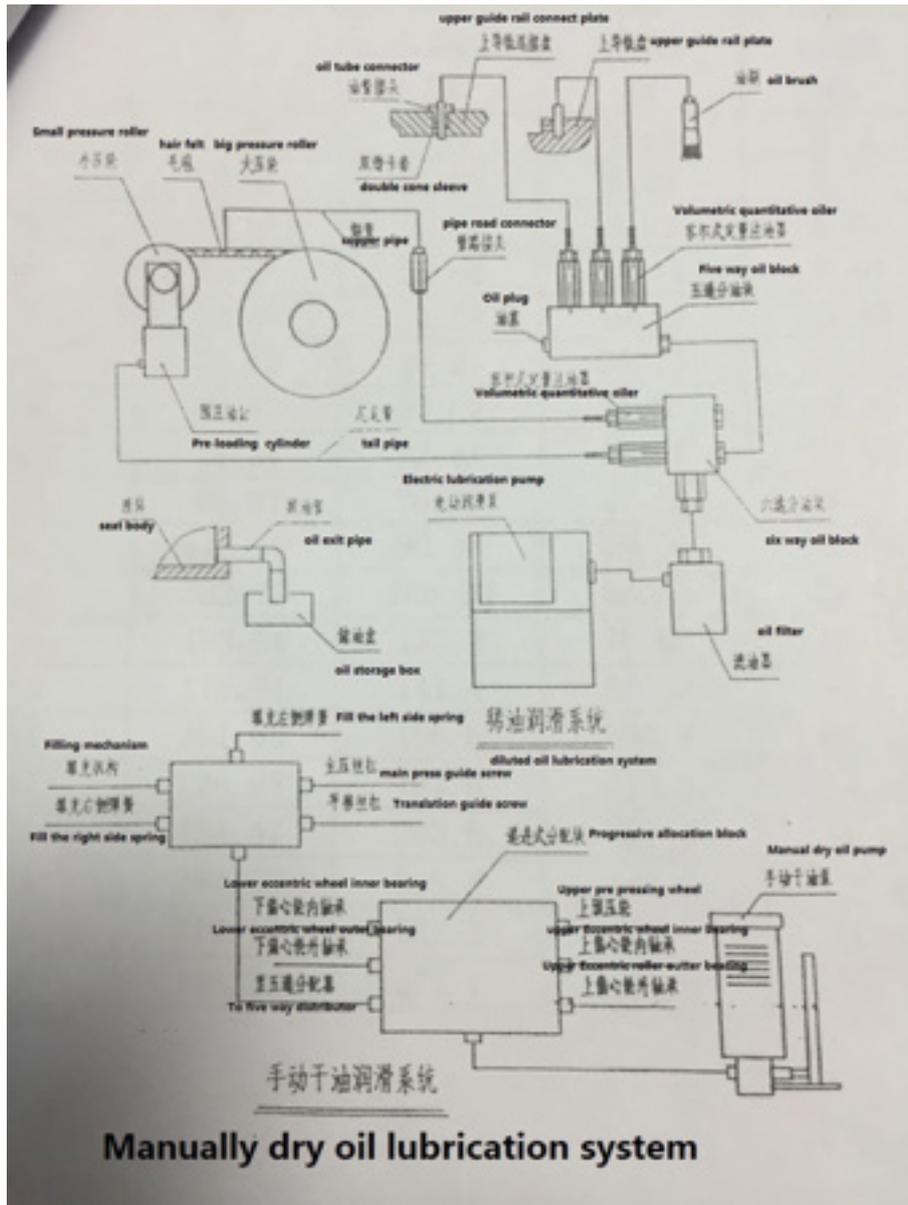
Hydraulic Stem

Regularly check the Hydraulic system oil level to maintain a depth of 5mm. The hydraulic system needs # 22 turbine oil.

Spindle Bearing Lubrication

There is a pressure-oil injection ring near set behind the door. Add lithium grease lubricant every 200 working hours.

Dry Oil Lubrication System



Manually dry oil lubrication system

Tablet Pressure Guide

Die Diameter (mm)	A (mm ²)	Flat Face Tablet 1mm ² 0.8KN	Shallow Concave Tablet 1mm ² 0.5KN	Deep Concave Tablet 1mm ² 0.3KN
3	7.07	5.65	3.53	2.12
4	12.57	10.05	6.28	3.77
5	19.63	15.71	9.82	5.89
6	28.27	22.62	14.14	8.48
7	38.48	30.79	19.82	11.55
8	50.27	40.21	25.13	15.08
9	63.62	50.89	31.81	19.09
10	78.54	62.83	39.27	23.56
11	95.03	76.03	47.52	28.51
12	113.10	90.48	56.55	33.93
13	132.73	106.20	66.37	39.82
14	153.94	123.2	76.97	46.18
15	176.71	141.4	88.36	53.01
16	201.06	160.8	100.5	60.32
17	226.98	181.6	113.5	68.09
18	254.47	203.6	127.2	76.34
19	283.53	226.8	141.8	85.06
20	314.16	251.3	157.1	94.25
21	346.36	277.1	173.2	103.9