



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

RTP33 ROTARY PELLET PRESS USER MANUAL

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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 RTP33 is a continuous operation automated rotary pellet press that has been designed to produce large commercial quantities of round pellets for the chemical and ceramic-processing industries.

It can press granules and dry powder into pellets with a maximum diameter of 12mm and maximum depth of 6mm.

With a powerful 2.2Kw motor, efficient powder recycling suction unit and 33 cutting heads, the RTP33 can produce up to 110,000 top quality pellets per hour.

Technical Specifications

| | |
|-------------------------------|------------------------------|
| Punches and dies | 33 sets |
| Max. Pressure | 40 KN |
| Max. Diameter of pellet | 16.5 mm |
| Max. Depth of fill | 15 mm |
| Max. thickness of pellet | 6 mm |
| Diameter of upper/lower punch | 26 mm |
| Length of upper/lower punch | 115 mm |
| Diameters of central die | 30 mm |
| Thicknesses of central die | 22 mm |
| Rotating ratio of norm wheel | 1.29 |
| Turret speed | 30 revs |
| Tab pressing capacity | 43,000 - 110,000 pieces/hour |
| Net weight | 850 Kg |
| Length (mm) | 930 |
| Depth (mm) | 900 |
| Height (mm) | 1600 |
| Max. power | 2.2 |
| Motor Speed | 950rpm |
| Voltage | 380 |

Installation

After removing the packing case, locate the RTP33 pellet press in a dry, well ventilated and well lit location. Ensure that it is on a stable, level surface, then secure it with the foundation bolt.

To ensure safe operation, this machine must be earthed.

Unless you have requested a different voltage, your new machine will operate on a 380V supply.

When connecting the power, check that the direction the motor turns in is the same as the direction of the arrowhead. Be sure not to run it in reverse.

The electric current meter, button and indicative lamps are located on the front door of machine base. A red lamp lights to confirm that the power is connected. When the motor is started the red lamp is replaced by a green lamp.

When installing the powder hoppers, attention must be paid to the gap between the feeder and the turret bench. This gap should be 0.05 – 0.1 mm – so that they are almost, but not quite touching.

INSTALLATION THE PUNCH DIES

The turret contains 33 sets of punches arranged evenly around its edge. Each consists of an upper punch, a lower punch, and a die.

Before installing the dies, remove the dustproofing plate, hoppers, feeder and semicircular cover at the front of the machine, and ensure all surfaces are clean.

- i. Loosen the dies' locking screws on the turret, to avoid contact between the dies and heads of the screws when installing.
- ii. There is a copper bar set through the upper punch hole; strike it lightly with a hammer to loosen. Install the dies, ensuring that they are flat and tightly seated. The upper surface of each die should be level with the upper working surface of the turret. Then tighten the screw.
- iii. To install the upper punches, loosen the cog of the upper orbit and oil the tails of the punches. Then insert the punches into the turret holes. As you insert each one, turn it with your thumb and forefinger to check that it can move up and down and rotate freely without friction. After fitting, tighten the cog.
- iv. To install the lower punches, open the small access port on the main body of the machine. The lower punches are installed following the same procedure as the upper punches.
- v. After the punches and dies have been installed, replace all the parts that you removed at the outset. Rotate the turret by hand for a couple of revolutions using the hand wheel to ensure everything is running smoothly. Check the upper and lower punches are moving cleanly, without friction. Turn on the motor and let the machine idle for two or three minutes. If it is running smoothly, begin production.

Operation

CAUTION: The tablet press should not be left running unattended. The operator should be vigilant for signs of a blockage or other incident that might cause damage if not remedied. Switch off the machine and check if any unusual noise occurs.

Each time you use the machine, it is important to check the punches are undamaged and in perfect condition before beginning production.

Also check the condition of the granules or powder, which must have a moisture content below 10 percent. Anything higher than this will affect the functioning of the machine and can damage it.

SPEED SELECTION

Select 'slow' for products that are more difficult to form into pellets.

Select 'fast' for other raw materials.

ADJUSTING POWDER FEED

There are two feed hoppers. The front hopper supplies the left pressure roller. The back hopper supplies the right pressure roller.

Adjusting the height of the hoppers changes the rate of flow of the powder. This can be achieved by loosening the screw at the top of the frame and raising or lowering the hopper, then tightening the screw again.

CHANGING TABLET THICKNESS

Pellet thickness is adjusted by changing the pressure, and by adjusting the amount of powder filled.

Changing the pressure is achieved by raising or lowering the lower pressure roller. Raising the roller a fraction increases the pressure and makes the pellets thinner, while lowering it a fraction reduces the pressure and allows for thicker pellets.

The dial on the control panel has increments of 0-10. These represent increased or reduced compression. After adjusting the dial, the star shaped handle in the centre must be tightened, as it acts as a lock.

ADJUSTING FILL VOLUME

The amount of powder filled into each pellet is adjusted by turning the dial numbered "0-45" that is located on the control panel. Each gradation equals a 0.01mm change in thickness. Turning it clockwise increases the fill volume; turning anti-clockwise reduces it.

NOTE - POWDER RECYCLING UNIT

The powder suction unit deposits the powder it collects in an aluminium box. Empty this box periodically to prevent overflow.

ADJUSTING RUNNING SPEED OF MOTOR

The motor and associated controls are at the base of the machine casing. Motor running speed is adjusted by turning the semi-circular shaped handle. A left turn increases speed, a right turn decreases it.

Maintenance & Lubrication

LUBRICATION

Add engine oil to the machine's oil cups and nozzles before each use, and as appropriate during use if the machine becomes warm.

From time to time, add 3-5 drops of oil to the glass oil cup that lubricates the turret bearing.

Once a week, add oil to the nozzle outside the axle sleeve, to lubricate the rolling bearings on each side of the transmission shaft.

Use grease to lubricate the tail of the punches and curve orbit.

NOTE When adding oil to any part of the machine, take care not to use excessive amounts that will overflow and contaminate the powder.

MAINTENANCE

The pellet press should be thoroughly examined once or twice a month to ensure that the moving parts are in good order. In particular, check the worm wheel, the worm, the bearing, the pressure roller, the crankshaft and the upper/lower orbit. Any damaged parts must be replaced before the machine is used.

After using the machine clean away any stray powder or other matter. If the machine is going to be left unused for any length of time remove the punches and dies and store them in oil in their metal box. This is important, to prevent corrosion.

Clean the entire machine thoroughly and cover with grease for protection against moisture. The cover with a cloth to protect against dust.

Trouble Shooting

| PROBLEM | CAUSE | SOLUTION |
|----------------------------|---|--|
| Inconsistent pellet weight | Length of the punches is different Lower punch failing to move freely Unequal height of the two hoppers Unequal amounts of powder in each hopper | Check punches with a calliper Clear any obstruction Adjust hoppers Add powder to one hopper |
| Hopper/feeder blockage | Powder too wet, or too fine grained, or granules too large. Foreign body has found its way into the system | Change powder/granules Clear any obstruction |

Caution

- Never feed wet material into the pellet press.
- If blockage or other problems arise during operation, never remove tablets by hand when the machine is running, as this may cause personal injury.
- Avoid wearing loose clothing when operating the machine.
- If the machine becomes damaged, stop using it at once until properly repaired.