RTP9 ROTARY TABLET PRESS
USER MANUAL
CONTENTS

Page 1. Introduction
Page 1. Technical Specifications
Page 2. Operation
Page 2. Feeding Mechanism
Page 2. Installation and Adjustment of Die
Page 2. Installation and adjustment of feeder
Page 2. Adjustment of feeding amount (Fill Depth)
Page 3. Adjustment of tablet thickness (Pressure)
Page 3. Powder supply adjustment
Page 3. Speed selection
Page 3. Electrical Operation
Page 4. Maintenance & Lubrication
Page 4. Lubrication
Page 4. Maintenance
Page 5. Trouble Shooting
Page 5. Cautions
Introduction

The RTP9 is a compact automatic rotary tablet press used in the pharmaceutical, chemical, food, electronic and other industries.

The machine is compatible with granular materials providing they have a powder content (above 100 mesh) of not more than 10%. It is often used for testing whether granular materials are suitable for pressing into tablets.

It is not suitable for pressing semi-solid or wet material, material with a low melting point, material that easily absorbs moisture, or powder without granular material.

Technical Specifications

<table>
<thead>
<tr>
<th>MODEL</th>
<th>RTP 9</th>
<th>RTP 7</th>
<th>RTP 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of turret press dies (pair)</td>
<td>9</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Max operating pressure (kn)</td>
<td>40</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>Max. tablet pressing diameter (mm)</td>
<td>12</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Max. tablet pressing thickness (mm)</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Max. feeding depth (mm)</td>
<td>15</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Max. tablet pressing output</td>
<td>16,200</td>
<td>12,600</td>
<td>9,000</td>
</tr>
<tr>
<td>Turret operating diameter (mm)</td>
<td>200</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Turret rotation speed, turn/min</td>
<td>0-30</td>
<td>0-30</td>
<td>0-30</td>
</tr>
<tr>
<td>Middle press die diameter (mm)</td>
<td>26</td>
<td>26</td>
<td>26</td>
</tr>
<tr>
<td>Middle press die height (mm)</td>
<td>22</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>Upper/lower press lever diameter (mm)</td>
<td>22</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>Upper/lower press lever length (mm)</td>
<td>115</td>
<td>115</td>
<td>115</td>
</tr>
<tr>
<td>Dimensions in (mm)</td>
<td>480<em>635</em>1100</td>
<td>480<em>635</em>1100</td>
<td>480<em>635</em>1100</td>
</tr>
<tr>
<td>Machine weight (kg)</td>
<td>260</td>
<td>260</td>
<td>260</td>
</tr>
<tr>
<td>Motor power (kw)</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Voltage</td>
<td>220</td>
<td>220</td>
<td>220</td>
</tr>
</tbody>
</table>
Operation

**FEEDING MECHANISM**

1) The feeding adjustment device to adjust the tablet weight is located inside the machine and controlled by a wheel on the front console. To increase the rate of feed turn the wheel counter clockwise. To decrease the feed turn it clockwise.

2) Feeding device: All nine heads are fed via single hopper above the turret. Changing the distance between the feeder and the turret operating surface will adjust the grain flow rate.

**INSTALLATION AND ADJUSTMENT OF DIE**

1) Before installing the die remove the feeding hopper. Open the right door and rotate the handwheel to clean the turret operating surface and the die hole. Rotate the pressure adjusting handwheel to adjust the pressure to the minimum level. Dismantle the lower press loading/unloading track.

2) Installing the middle die: Loosen the middle press fixing screw about 1mm from the outer circle of the turret, taking care not to displace the powder suction nozzle or other parts. When installing the middle press, check that it is not coming in contact with the top of the screw. As space is restricted, place it carefully into the press hole and hammer in gently. Check that it does not protrude above the level of the turret plane. Tighten the screw.

3) Installing the upper die: Dismantle the inlaid tongue, insert the upper die into its hole, rotate it with the thumb and index finger to check the upward/downward movement of the head is without impingement. Then reinstall the inlaid tongue.

4) Installing the lower die: install as per the method for the upper die.

5) Commissioning: after installing all the dies, turn the handwheel to rotate the turret a couple of times and check the dies move cleanly. Check the highest point (i.e. tablet release point), is 0.1 – 0.3mm higher than the turret operating surface. Close all the doors, run the motor without a load for 2 minutes. The machine can then be put into operation.

**INSTALLATION AND ADJUSTMENT OF FEEDER**

Install the feeder and secure with the knurled screw. Adjust the control to make the gap between the feeder bottom and the turret operating surface between 0.05 – 0.1mm. Tighten the knurled screw. Adjust the height of the powder scrapping plate to align the bottom plane with the turret operating surface, then tighten.

**ADJUSTMENT OF FEEDING AMOUNT (FILL DEPTH)**

Adjustment of feeding amount is controlled by the small handwheel on the right side of the front console. To decrease the amount fed rotate the control clockwise; to increase it, rotate counter clockwise.
**ADJUSTMENT OF TABLET THICKNESS (PRESSURE)**

Tablet thickness is controlled by the small handwheel on the left side of the console. To increase pressure (and decrease thickness) turn the control counter clockwise. To reduce pressure (and increase thickness) turn it clockwise.

**POWDER SUPPLY ADJUSTMENT**

To adjust the flow of raw material into the machine, unscrew the bolt at the side of the bucket carriage, then adjust the adjusting bolt on the bucket carriage to change the distance from the bucket mouth to the turret operating surface. Re-tighten the bolt.

**SPEED SELECTION**

To increase the rotating speed of the turret turn the speed control clockwise. To decrease it turn it counter clockwise.

Operating speed can directly affect the tablet weight and quality. As there are differences in the nature, viscosity, water content and grain diameter of raw materials, actual speed at a given setting will vary. In general, when pressing materials with a higher mineral or plant fibre content, or making large tablets, or using material that has poor binding qualities, it is better to use a speed below 25 revolutions/minute. The optimal tablet pressing speed can be found through trial and adjustment. It is recommended that the rotation speed for continuous pressing should not exceed 80% of the maximum rated rotation speed.

**ELECTRICAL OPERATION**

1) Operation procedures:

Open the cabinet door and switch on the power supply. This will light the indicator lamp on the operation panel. Press RUN, slowly turn the frequency conversion button, and the speed will start to increase.

To stop the machine in an emergency press STOP, and the machine will stop immediately. When finished pressing tablets, switch off the power.
Maintenance & Lubrication

LUBRICATION

1) Add oil to the lubricant nozzle before each use of the machine. Further lubricant can be added during operation as determined by temperature, running speed and length of operation.

2) Use N46 oil in summer and N32 in winter. Fill until the gear is covered to the required height, and check the oil level through the glass during operation. Change the oil after about six months.

3) To lubricate the upper track disc, apply oil with a brush prior to each use.

4) Use N32 mechanical oil to lubricate the press pins and track. Take care not to apply too much, as excessive amounts will leak onto the raw materials and contaminate the pills.

MAINTENANCE

1) Regularly inspect the components, 1–2 times per month, including the worm, worm gear, bearing, pressing wheel, camshaft, upper/lower tracks, checking clean movement of the moving parts and for wear. Make repairs immediately if a defect is found.

2) After operation, remove unused powder and brush off residual powder from all parts of the machine. For a lengthy shutdown, dismantle the dies and clean the machine fully, apply anticorrosive oil and cover with a cloth shield.

3) Keep the dies clean and store in their special box, immersed fully in oil to avoid rust.

4) Clean the operations area regularly. In particular, avoid dust or ash contamination when manufacturing medical or food tablets.

5) Maintain and regularly inspect the electrical components. Clean accumulated dust from the cooling fan regularly with compressed air.

6) To prolong the machine’s life, maintain a good working environment with moderate temperature and humidity.

7) Electrical maintenance should be carried out by qualified personnel, especially for the frequency converter, which should be sent to the manufacturer if repair is needed.

8) Before making an insulation test for the electrical components, first dismantle all the main circuit control line of the frequency converter, to avoid damage. For an insulation test to the frequency converter, please refer to the frequency converter’s operation instructions.
Trouble Shooting

1) **Jitter of upper/lower pressing wheel**: wear of pressing wheel due to lack of lubrication. In the event of slight wear, repair and add lubricant; for serious wear, replace immediately.

2) **Wear of upper track**:
   a. Often the result of dry wear from lack of lubricant, causing slight damage to the track surface. For serious cases, replace the track.
   b. For less serious cases try lubricating the track with 30” gear grease or air compressor grease before starting the machine;
   c. Too much dust can cause the press to lift and wear away the upper track. Change the grain production process to ensure the powder content (above 100 mesh) of the grain is not more than 10%.

3) **Inconsistent tablet weight**
   a. Can be caused by wear or by incorrect installation of feeder. If the feeder is worn, replace the feeder; if it is due to incorrect installation, make adjustments;
   b. Could also be a problem with the die: check the height of the lower/upper press pin. If it exceeds the range of tolerance, change it.

Caution

- Never feed wet material into the tablet 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.