1. This machine is used in mining, metallurgical industry, building material, highway, railway, and chemical industry.

2. It can crush mining stones and rocks whose compressive strength is not more than 320 MPa.

3. The max size of the stuff should not exceed the standard in the following table.

4. The output will be affected when the stuff has high viscosity.
**Work principle**

The motor drives the mobile jaw up and down through eccentric shaft. The angle between toggle plate and mobile jaw increases when mobile jaw plate moves up. So the mobile jaw plate closes up the fixed jaw plate. The stuff will be crushed in this process. The angle between toggle plate and moving jaw decreases when mobile jaw moves down. The mobile jaw plate move away from stationary jaw plate with the pulling of draw rod and spring, so the crushed stuff will be discharged from the outlet. This process will repeat. The moving jaw will crush and discharge the stuff circularly.
<table>
<thead>
<tr>
<th>Model</th>
<th>Feed Opening Size (mm)</th>
<th>Max. Feeding Size (mm)</th>
<th>Adjustable Range of Output Size (mm)</th>
<th>Capacity (t/h)</th>
<th>Motor Power (kw)</th>
<th>Weight (t)</th>
<th>Overall Dimension (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PE250×400</td>
<td>250×400</td>
<td>200</td>
<td>20-50</td>
<td>5-20</td>
<td>15</td>
<td>2.9</td>
<td>1430×1310×1340</td>
</tr>
<tr>
<td>PE400×600</td>
<td>400×600</td>
<td>350</td>
<td>40-100</td>
<td>15-60</td>
<td>30-37</td>
<td>6.8</td>
<td>1700×1732×1653</td>
</tr>
<tr>
<td>PE500×750</td>
<td>500×750</td>
<td>425</td>
<td>50-100</td>
<td>40-100</td>
<td>46-55</td>
<td>11.2</td>
<td>2035×1921×2000</td>
</tr>
<tr>
<td>PE600×900</td>
<td>600×900</td>
<td>480</td>
<td>65-180</td>
<td>60-140</td>
<td>55-75</td>
<td>16.5</td>
<td>2290×2200×2370</td>
</tr>
<tr>
<td>PE750×1060</td>
<td>750×1060</td>
<td>630</td>
<td>80-150</td>
<td>80-230</td>
<td>90-110</td>
<td>29</td>
<td>2655×2302×3110</td>
</tr>
<tr>
<td>PE900×1200</td>
<td>900×1200</td>
<td>750</td>
<td>95-185</td>
<td>140-320</td>
<td>110-132</td>
<td>54.5</td>
<td>3789×3050×3025</td>
</tr>
<tr>
<td>PE1000×1200</td>
<td>1000×1200</td>
<td>860</td>
<td>105-185</td>
<td>180-400</td>
<td>160-200</td>
<td>56.5</td>
<td>3900×3320×3280</td>
</tr>
<tr>
<td>PE1200×1500</td>
<td>1200×1500</td>
<td>1020</td>
<td>150-300</td>
<td>250-800</td>
<td>220-250</td>
<td>99.6</td>
<td>4300×3540×4043</td>
</tr>
<tr>
<td>PEX150×250</td>
<td>150×250</td>
<td>125</td>
<td>10-40</td>
<td>1-3</td>
<td>5.5</td>
<td>0.85</td>
<td>896×745×935</td>
</tr>
<tr>
<td>PEX150×750</td>
<td>150×750</td>
<td>125</td>
<td>12-45</td>
<td>5-16</td>
<td>15</td>
<td>3.8</td>
<td>1205×1465×1203</td>
</tr>
<tr>
<td>PEX250×750</td>
<td>250×750</td>
<td>210</td>
<td>25-60</td>
<td>10-40</td>
<td>22-30</td>
<td>5</td>
<td>1667×1545×1020</td>
</tr>
<tr>
<td>PEX250×1000</td>
<td>250×1000</td>
<td>210</td>
<td>25-60</td>
<td>15-50</td>
<td>30-37</td>
<td>6.8</td>
<td>1964×1550×1380</td>
</tr>
<tr>
<td>PEX250×1200</td>
<td>250×1200</td>
<td>210</td>
<td>25-60</td>
<td>20-60</td>
<td>37-45</td>
<td>8.5</td>
<td>2192×1605×1415</td>
</tr>
<tr>
<td>PEX400×1200</td>
<td>400×1200</td>
<td>320</td>
<td>35-95</td>
<td>28-95</td>
<td>45-55</td>
<td>11.7</td>
<td>2250×2100×1960</td>
</tr>
<tr>
<td>JCE1302 1</td>
<td>90×1300</td>
<td>150</td>
<td>10-30</td>
<td>12-50</td>
<td>30-37</td>
<td>6</td>
<td>1320×2150×1175</td>
</tr>
<tr>
<td>JCE1003</td>
<td>250×1000</td>
<td>220</td>
<td>20-40</td>
<td>15-65</td>
<td>30-37</td>
<td>5.6</td>
<td>1400×1850×1310</td>
</tr>
<tr>
<td>JCE1303</td>
<td>250×1300</td>
<td>220</td>
<td>20-40</td>
<td>26-85</td>
<td>37-45</td>
<td>6.8</td>
<td>1460×2150×1175</td>
</tr>
<tr>
<td>JCE604</td>
<td>400×600</td>
<td>360</td>
<td>35-85</td>
<td>15-85</td>
<td>30-37</td>
<td>10</td>
<td>1020×1460×1840</td>
</tr>
</tbody>
</table>
Structure

E-Mail: joyal@crusherinc.com
Http://www.joyalcrusher.com
The JOYAL Crushing plant includes vibrating feeder, jaw crusher, impact crusher or cone crusher, vibrating screen, belt conveyor and centrally electric controlling system, etc. The designed capacity is from 40t/h to 600t/h. To meet customer's specific requirement for the stone crushing, we can also add other equipments such as cone crusher, dust catcher on the crushing plant.
Process of Crushing Plant

The Big materials are fed to the jaw crusher evenly and gradually by vibrating feeder through a hopper for the primary crushing.

After first crushing, the material will transferred to impact crushe or cone crusher by belt conveyor for secondary crush; the crushed materials will then transferred to vibrating screen for separating.

After being separated, the parts that can meet standard will be taken away as final products, while the other parts will be returned to impact crushe, thus forming a closed circuit.

Size of final products can be combined and graded according to customer’s specific requirement. We can also equip dust catcher system to protect environment.

<table>
<thead>
<tr>
<th>NO.</th>
<th>EQUIPMENT</th>
<th>MODEL</th>
<th>QTY.</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Vibrating Feeder</td>
<td>GZD1500*6000</td>
<td>1</td>
</tr>
<tr>
<td>II</td>
<td>Jaw Crusher</td>
<td>PE1200*1500</td>
<td>1</td>
</tr>
<tr>
<td>III</td>
<td>Feeder</td>
<td>GZG-600</td>
<td>1</td>
</tr>
<tr>
<td>IV</td>
<td>Cone Crusher</td>
<td>ZYS66B</td>
<td>1</td>
</tr>
<tr>
<td>V</td>
<td>Vibrating Screen</td>
<td>ZYS21460</td>
<td>1</td>
</tr>
<tr>
<td>VI</td>
<td>Cone Crusher</td>
<td>ZYS66D</td>
<td>2</td>
</tr>
<tr>
<td>VII</td>
<td>Vibrating Screen</td>
<td>ZYS21460</td>
<td>3</td>
</tr>
</tbody>
</table>
Images of Crushing Plant

E-Mail: joyal@crusherinc.com
Http://www.joyalcrusher.com
**Preparation before Start-up**

- Check the lubrication (The manufacturer just oil the machine for trial run).
- Check whether all the parts are fastened.
- Check the belts, if the belts or flywheel has been dirtied by oil, clean it immediately.
- This machine should be started up without loading, make sure that there is no stuff between mobile jaw plate and stationary jaw plate.
- When the stuff is very hard, the max feed size should less than \( \frac{2}{3} \) of the opening width.

**Start-up**

- Start up when the machine and transmission part is normal.
- This machine should be started up without loading.
- After start-up, if anything abnormal, stop it and get rid of the problem.

**Usage and Maintenance**

- The machine can be put into operation only when it works normally without load.
- The stuff should be fed steadily.
- Temperature rise of bearing should not exceed 35\(^\circ\)C, the max temperature should not exceed 70\(^\circ\)C. Otherwise, stop the machine and examine at once.
- Stop feeding before stopping the motor. Stop the motor only when all the stuff is discharged from the machine.
- If the machine is blocked by the stuff, stop the motor at once. Start up the machine again when the blocked stuff is clean away.
- Clean the bottom of toggle plate and keep the back of moving jaw clean.
- The jaw plate can be reversed when one end is worn out.
Check the lubrication frequently to make sure the machine can work normally and extend the life time.

The lubrication used in the machine depends on the place and climate.

Usually quicklime grease is used.

The lubricant grease added to the bearings should be 50～70% of its capacity. Change the lubricating oil once every three months. Before changing the oil, wash the bearings carefully with clean petrol or kerosene. The contacting part of toggle plate and toggle plate seat should be oiled before start-up.
Easy damage parts

- toggle plate
- side guard plate
- fixed jaw plate
- mobile jaw plate
- spring
- bearing
- V-belt
- toggle plate gasket

E-Mail: joyal@crusherinc.com
Http://www.joyalcrusher.com
Safety rule

- Operator should be well trained.
- It is forbidden to watch the machine from the top of the machine when the machine is running.
- It is forbidden to adjust, clean or repair the machine when the machine is running.
- It is forbidden to move the stuff from input opening and crushing position when the machine is running.
- The electric equipment should be grounded and be put into insulating tube.
# Problem and solution

<table>
<thead>
<tr>
<th>Possible problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>The flywheel rotates but cannot crush,</td>
<td>1. spring broken</td>
<td>1. replace spring</td>
</tr>
<tr>
<td>the toggle plate falls down</td>
<td>2. draw bar broken</td>
<td>2. replace draw bar</td>
</tr>
<tr>
<td></td>
<td>3. draw bar bolts loose</td>
<td>3. fasten the bolts</td>
</tr>
<tr>
<td>Mobile jaw plate jump</td>
<td>Jaw plate fasteners loose</td>
<td>Fasten the bolts</td>
</tr>
<tr>
<td>Fixed jaw plate jump</td>
<td>Jaw plate fasteners loose</td>
<td>Fasten the bolts</td>
</tr>
<tr>
<td>The temperature of bearing too high</td>
<td>1. lack of lubricant oil</td>
<td>1. Add more oil</td>
</tr>
<tr>
<td></td>
<td>2. oil dirty</td>
<td>2. Replace the oil</td>
</tr>
<tr>
<td></td>
<td>3. bearing broken</td>
<td>3. Replace the bearing</td>
</tr>
<tr>
<td>Noise at back of the machine</td>
<td>Draw rod loose, toggle plate</td>
<td>Fasten the draw bar bolt</td>
</tr>
<tr>
<td></td>
<td>beat the moving jaw and liner gasket</td>
<td></td>
</tr>
<tr>
<td>Spring broken</td>
<td>Spring not loose when adjusting</td>
<td>Fasten the draw rod bolt</td>
</tr>
<tr>
<td></td>
<td>the discharging outlet</td>
<td></td>
</tr>
</tbody>
</table>
Shanghai Joyal Mining Machinery Co., Ltd.
Add: No.3389, East Huaxia Road, Pudong New Area, Shanghai, China.
Email: joyal@crusherinc.com
Tel: 0086-21-68763311 0086-21-68763366
Fax: 0086-21-68763366
Post Code: 201201
http://www.joyalcrusher.com