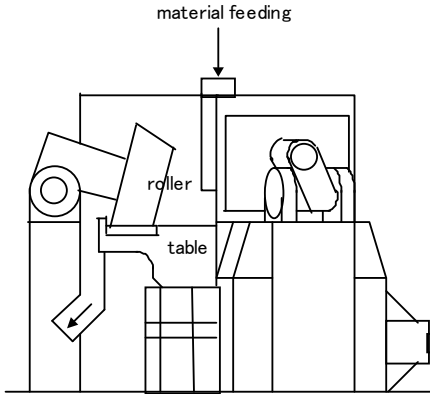
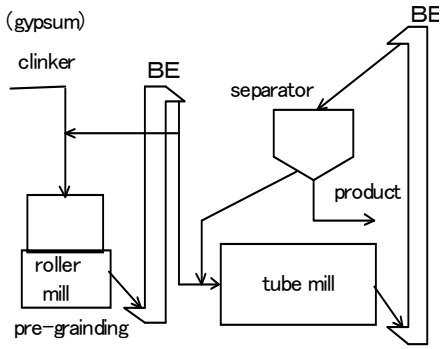


Item	Pre-grinding of roller mill system	Application
		Finishing process
<b>Background</b>	<p>For the purpose of decreasing the specific electrical power consumption in the finishing process, this installs a vertical roller mill for pre-grinding of clinker in the upstream of the tube mill. The roll press system preceded as pre-grinding system, but there are many machinery troubles (flake and crack of roll surface, damage of roll shaft and bearing) for high pressure. This system was developed on the vertical roller mill which has achieve satisfactory results. It was introduced from the latter half of the 1990s, and the introduction rate in 2000 is 13%.</p>	
<b>Descriptions</b>	<p>This system installs a vertical roller mill (of high grinding efficiency) for a pre-grinding in the upstream of the tube mill. Clinkers are milled the turn table and 2~4 rollers. The basic structure is the same as vertical roller mills for raw materials or cement. But the roller mill for pre-grinding have no classifier and air sweep. Pre-ground clinkers were discharged outside mill. Fine particles are separated from pre-ground clinkers with vibrating screen, and they are fed to finishing tube mill. The structure (Fig.1) and the flow (Fig.2) are shown below.</p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p>Fig.1 Structure</p> </div> <div style="text-align: center;">  <p>Fig.2 Flow</p> </div> </div>	
<b>Results</b>	<p>1) rinding capacity of finish mill increases about 30~60%.  2) Specific power consumption in finishing process decreases 10~20%.</p>	
<b>Cost estimation</b>	<p>6.4~9.1 million US\$ including cost of ancillary facilities and construction [100t/h]  [1US\$=¥110]</p>	
<b>Related materials</b>	<p>1) Raw material pre-grinding roll crusher</p>	
<b>Reference</b>		