



TEASER CONSULTING ENGINEERS PRIVATE LIMITED

OFF. NO-11, 3RD FLR., SCO NO-3 & 4, HUDA MARKET, SECTOR-19,
FARIDABAD, HARYANA, (121002) INDIA

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Mechanical Spare Parts

1. Crusher Spares: -

Crusher spares are the (critical wear and replacement parts) of crushers used in cement plants to ensure continuous, efficient crushing of raw materials. These parts help maintain optimal performance, reduce downtime, and extend equipment life.

- **Hammers (for hammer crushers)**
- **Blow bars (impact crusher)**
- **Jaw plates (jaw crushers)**
- **Liners and cheek plates**
- **Rotor assemblies**
- **Bearings**
- **Grizzly bars**
- **Toggle plates and seats**

Crushers are used in cement plants to break down raw materials like limestone, clay, and shale into smaller pieces suitable for further processing. Over time, the high-impact and abrasive nature of these materials cause wear and tear on critical components.





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2. Raw Mill / Cement Mill Spares: -

Raw Mill and Cement Mill spares refer to the critical components and replacement parts required to ensure the smooth and efficient operation of the raw material grinding and cement grinding processes.

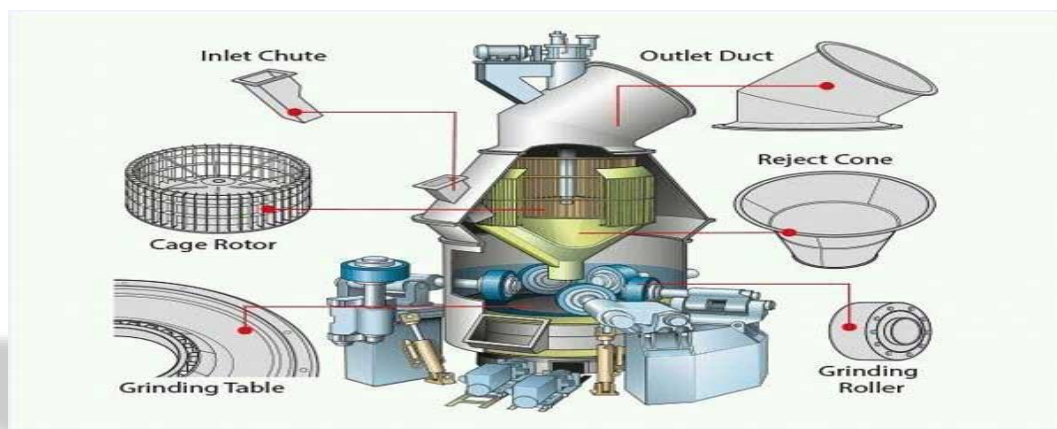
- **Liners (shell and diaphragm)**
- **Grinding media (balls)**
- **Mill internals**
- **Girth gears**
- **Pinions**
- **Mill heads and trunnions**
- **Trunnion bearings**
- **Couplings**

The Raw Mill grinds raw materials like limestone, clay, and iron ore into fine powder called raw meal.

Raw meal is later fed into the rotary kiln for the clinkerization process.

The Cement Mill Grinds clinker, gypsum, and additives into finished cement.

Final product is stored in silos before packaging.





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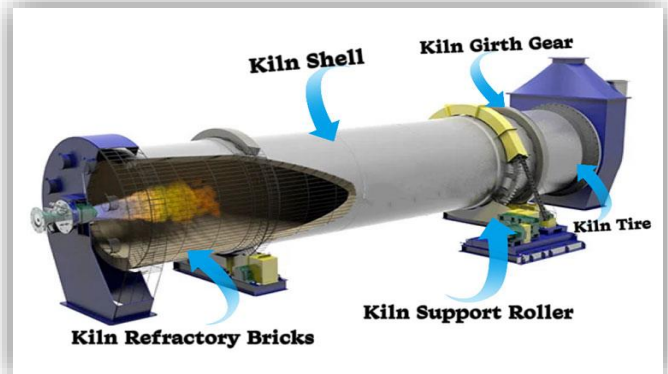
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3. Kiln Spares: -

Kiln Spares are the mechanical, refractory, and thermal components used to maintain, repair, or replace worn-out parts of a rotary kiln system in a cement plant.

- Kiln tyres (riding rings)
- Kiln rollers and shafts
- Girth gears & pinions
- Kiln seals (graphite, leaf, or spring-loaded)
- Support bearings
- Thrust rollers
- Chain links (for chain systems inside the kiln)

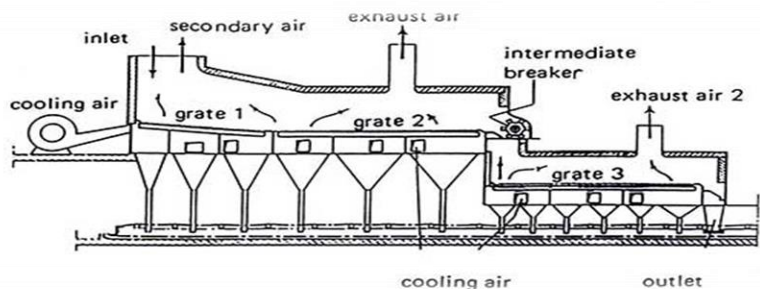


The rotary kiln is the central equipment where raw meal is heated and chemically transformed into clinker. This process occurs at high temperatures ($\sim 1450^{\circ}\text{C}$). To keep the kiln running efficiently and safely, several kiln spares (replacement parts) are used. These spares play crucial roles in rotation, heat containment, and sealing.

4. Cooler Spares: -

Cooler spares are the essential mechanical and wear parts used for the maintenance and repair of the clinker cooler in a cement plant, ensuring optimal cooling performance and heat recovery.

- Grate plates
- Cooler fans
- Clinker crusher hammers
- Hydraulics and actuators



The cooler is a vital unit placed after the rotary kiln. Its primary function is to rapidly cool hot clinker (from $\sim 1450^{\circ}\text{C}$ down to $\sim 100^{\circ}\text{C}$) using air. This process recovers heat and improves energy efficiency. Cooler spares are the replacement parts used to ensure smooth and efficient operation of the clinker cooler.



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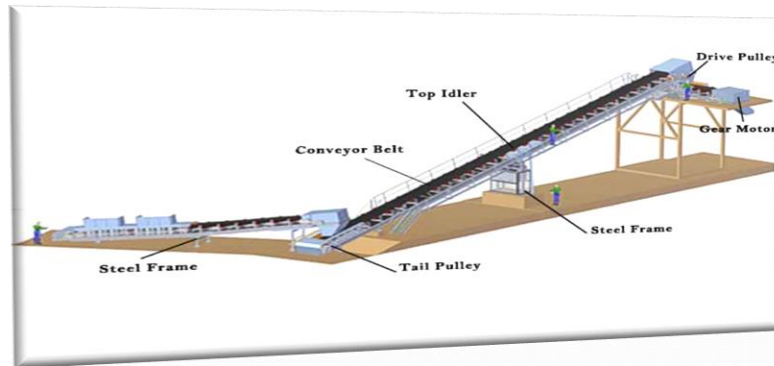
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5. Conveyor System Spares: -

Conveyor system spares are the mechanical and electrical components used to replace or repair parts of material handling conveyors in a cement plant, ensuring smooth, safe, and continuous material flow.

- Conveyor belts
- Idlers and rollers
- Pulleys
- Belt scrapers
- Gearboxes
- Motors
- Chains and sprockets



Conveyor systems are used extensively to transport materials like limestone, raw meal, clinker, gypsum, and cement between different processing areas. To keep these systems running efficiently, various spares (spare parts) are needed for maintenance, repair, and replacement.

6. Rotary Equipment Spares: -

Rotary Equipment Spares are the mechanical, electrical, and sealing components used to maintain and repair rotating machinery in a cement plant, ensuring reliability, performance, and reduced downtime.

- Seals
- Couplings
- Bearings
- Sleeves
- Shaft assemblies





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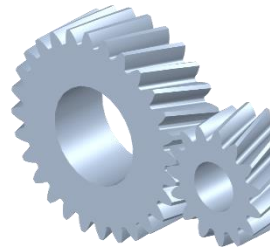
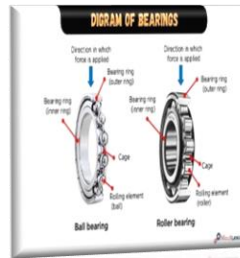
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7. Gearbox & Drive Spares: -

Gearbox and drive spares are essential components used to maintain and repair the power transmission systems in cement plants. These systems drive key equipment such as raw mills, cement mills, kilns, crushers, conveyors, and fans.

- Gears (helical, bevel, planetary)
- Bearings
- Shafts
- Housing
- Lubrication systems



A gearbox reduces high-speed motor input to the required lower speed and increases torque to drive large machines. It contains gears, shafts, and bearings that transfer mechanical power efficiently.

The drive system includes the motor, couplings, and often a VFD (Variable Frequency Drive). It controls the speed, torque, and direction of the equipment.

8. Hydraulic and Pneumatic Spares: -

Hydraulic and pneumatic systems play a key role in controlling motion, force, and automation in various cement plant processes. Their spares ensure smooth operation and quick maintenance when parts wear out or fail.

- Cylinders
- Pumps
- Valves
- Filters
- Hoses



Hydraulic systems use pressurized oil to transmit power for high-force applications.

Pneumatic systems use compressed air to perform work, usually for faster, lighter-duty tasks.



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9. Miscellaneous: -

Miscellaneous refers to various supporting components, auxiliary systems, tools, consumables, and spare parts that are not part of major mechanical or electrical systems but are essential for smooth, safe, and efficient operation.

- Fasteners (nuts, bolts, washers)
- Gaskets
- Expansion joints
- Heat exchangers
- Valves and flanges

