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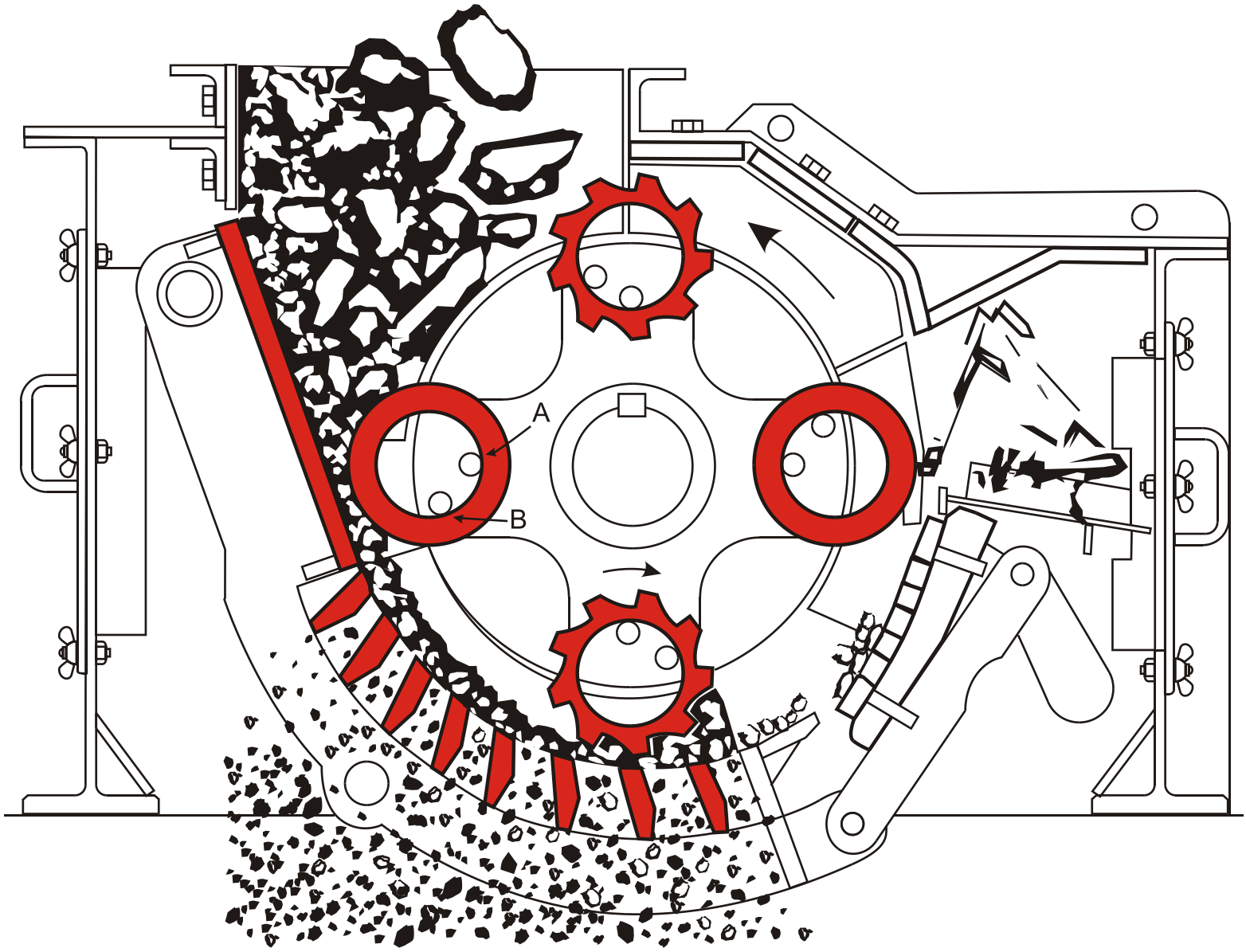
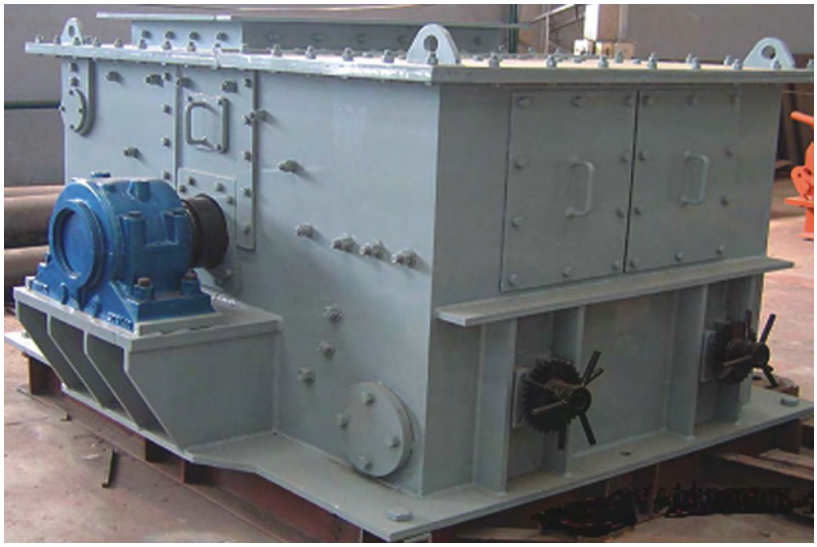


RING GRANULATORS

PRODUCT DIVISION, **TECPRO SYSTEMS LIMITED**



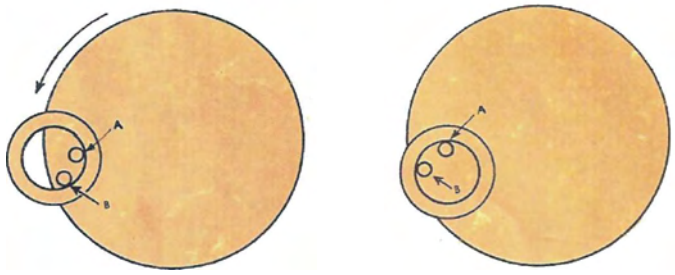
CRUSHING PRINCIPLE

The crushing action is performed when material is dropped through the feed opening where it is struck, in mid air by the multiple rings which are being driven round by the rotor discs in direction towards the breaker plate. The rings are mounted on suspension bars and diagram shows the position when the machine is at rest. When the rotor is set in motion centrifugal force brings the ring out against material to be crushed.

As material is fed to the machine the rings are forced back towards the rotor centre until bar is encountered by the ring internal surface and a forward driving force is exerted. The material is broken and discharged through the cage bars or screen plates thus easing the load and allowing the ring to move out until it is held once again by suspension bar before encountering the incoming feed once again.

The rings are thus held in deep contact with the bed of material on the cage bars / screen plates and they revolve with planet like motion relative to the direction of rotor rotation. This positive rolling feature provides a constant effective crushing action which in turn ensures a granular product sizing.

Single tooth rings or plain rings or double tooth or a mixture of both are used to meet the particular crushing conditions required and the ring granulators are the ideal machines for the minimum fines production of coal.



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ADVANTAGES

- High and constant capacity
- Low susceptibility to breakdowns
- Long lifetime
- Easy replacement of wear and spare parts
- High reduction ratio

APPLICATION

TECPRO Ring Granulators are mainly used for thermal power plant industries and secondary crushing of hard coal in coal handling plant.

SCOPE OF APPLICATION

- Capacity : Up to 1500TPH
- Size of feed material : Up to approx. 450 mm
- Final grain size : Less than 25 mm

MACHINE DESCRIPTION

The Tecpro Ring Granulator is developed from the conventional hammer mill by substituting rings for hammers. Its unique action results in a minimum of both oversize and fines thereby improving efficiency.

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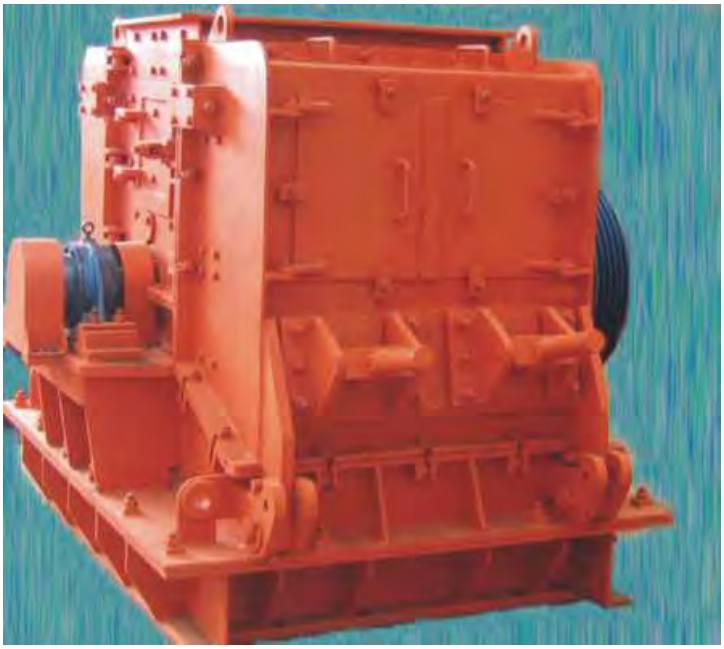
It comprises of screen plate / cage bar steel box with an opening for the introduction of the material to be crushed set to one side in the top cover. A sloping breaker plate arranged, on a hinged cage frame is set to one side of the feed entry and a power driven horizontal main shaft passes from frame side to frame side parallel to this breaker plate.

This main shaft carried in roller bearings from the box sides, supports a number of circular discs fixed at regular intervals across its length within the frame.

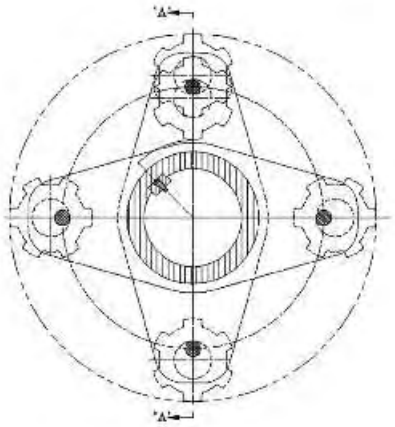
A series of bars running parallel to the main shaft, pass through these discs near their outer edges. The bars are equally spaced about the main shaft center and carry a series of rings which are free to turn on the bars irrespective of the main shaft rotation. Below the shaft / disc / ring assembly, called collectively, the rotor assembly, the movable cage frame is carried round at a radius marginally larger than that of the ring running periphery. According to the duty required the cage area can be left open or fitted with screen plates / cage bars and the entire cage assembly is set in close proximity to the rings by screw jack mechanism operated from outside of machine.

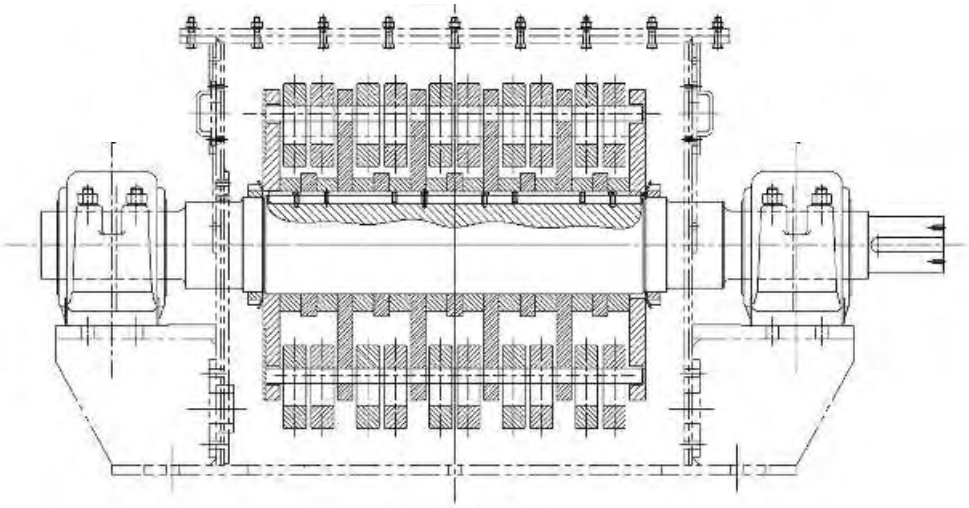
SPECIAL FEATURES

- Continuous crushing up to 2500 tones per hour depending on product size required.
- Ability to accept large feed size relative to rotor diameter.
- Uniformity of product sizing accomplished by rolling action of ring hammers.
- Hinged breaker plate/cage assembly to compensate for wear.
- Positive adjustment of cage assembly from outside whilst machines running on load.
- Compact low head room construction with wear resistant steel crushing members.
- Access to crushing chamber through hinged roof section speedy ring changing.
- Built-in collection of tramp metal and other debris in caged machines.
- Spherical Roller bearings in all machines and all grease lubricated.
- Vee belt or direct coupled drive systems as appropriate for duty and space available.



ROTOR ASSEMBLY





CAPACITIES & SPECIFICATION

Machine Type	Rotor dimension	Feed Size (mm)	Power (Max)	Tons per hour capacity for nominal product			
				50 mm	37 mm	25 mm	15 mm
RG 1008	1000 x 800	400	110 KW	200	140	100	80
RG 1010	1000 x 1000	400	120 KW	300	230	200	130
RG 1015	1000 x 1500	400	200 KW	410	340	300	180
RG 1018	1000 x 1800	400	250 KW	600	540	420	300
RG 1228	1200 x 2850	500	800 KW	1500	1200	1000	800
RG 1828	1850 x 2850	600	1000 KW	2500	2000	1800	1500

All above capacities are based on crushing coal weighing 0.8T/m3

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To enable our experienced engineers to select the best suited equipment for your application, please provide as many details as possible of the following details that shall result in prompt and accurate solution to your crushing requirement:

1) Material to be crushed
2) Maximum feed dimension
3) Approximate feed size analysis
4) Moisture content
5) Stickiness
6) Bulk Density
7) Product size requirement
8) Friability
9) Abrasiveness characteristics
10) Do you intend close circuit operations?
11) Capacity desired in tons per hour

OUR OTHER PRODUCTS AT A GLANCE

1) Roll crusher (Smooth & toothed), Reversible and Non reversible Hammer Mills, Impactors, Roller Screens, Grinding Mills in technical collaboration with **M/s. FAM Magdeburger Forderanlagen und Baumaschinen GmbH, Germany.**
2) Heavy Duty cone crushers and Jaw Crushers in collaboration with **M/s Maschinenfabrik LIEZEN und Giesserei GmbH, Austria.**
3) Aggregate Crushing plant, single toggle Jaw Crushers, Cone Crushers, vertical shaft Impactors in collaboration with **M/s Van Duck Machinery Corporation, Korea.**
4) Flip flow screens in technical collaboration with **M/s Hein, Lehmann Trenn - Und Fördertechnik GmbH, Germany**
5) Vibrating Screens (Circular and Linear Motion type), Vibrating Feeders, Apron Feeders, Reciprocating Feeders in technical collaboration with **M/s Peytec Aschauer & Peyfuss OEG, Austria.**
6) Turnkey Projects - Fuel Handling Systems, Crushing and Screening systems, Belt Conveyor Systems and Raw Material Handling Systems for Steel, Cement, Mining, Power, Paper Industry etc.,




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