



# Iron Ore Pellet Plants - Indigenous reliable supplier for Pelletising Discs and Process Fans - Rotoauto

Rotoauto Engineering Solutions Pvt. Ltd. based at Chennai is a multifaceted heavy engineering enterprise with focus on large rotary process equipments catering to core industries like Steel, Power, Cement, Petrochemical, etc. In the steel industry, Rotoauto is a well established OEM with expertise in design, manufacture and supply of Iron Ore Pelletising Discs (Balling Discs) and Process fans.



**Beneficiation and Pelletisation** : The Iron ore fines generated during the excavation process cannot be directly used in the Iron making process. The low grade iron ore fines will have to be beneficiated and then pelletised before being utilised in the Blast Furnace or DRI process for making Pig iron. Pellets are uniform and between the size-range of 9 to 16 mm, with approx. 65% to 68% Iron concentration. Such uniformly formed pellets with their high mechanical and abrasive strength increases sponge iron production by at least 25% with the same quantum of fuel.

Pelletisation of Iron ore can be done either by Straight Grate technology or by the Grate Kiln technology. In India, Hematite ( $Fe_2O_3$ ) ore is available in abundance compared to Magnetite ore ( $Fe_3O_4$ ). Straight Grate technology is widely used with Hematite ore; whereas in the Grate Kiln technology, the ore preferred is Magnetite. Both the technologies have their advantages and disadvantages. However, the Indian Iron-ore being predominantly Hematite, the Straight Grate technology is a preferred option.

The diagram depicts the general flow of processes in both the technologies and it is evident that irrespective of the choice of technologies, pelletising discs and process fans are common vital equipment for proper performance of these plants.

Plant technical consultants compute various factors to decide on the number of pelletising discs and capacity requirement of process fans. Certain key driving factors are overall plant pellet generation capacity (e.g. 0.6/1.2 MTPA), ore composition and availability, recirculation losses of undersized/oversized green pellets, plant elevation from Mean Sea Level, kiln sizing, etc. of the pellet plant.

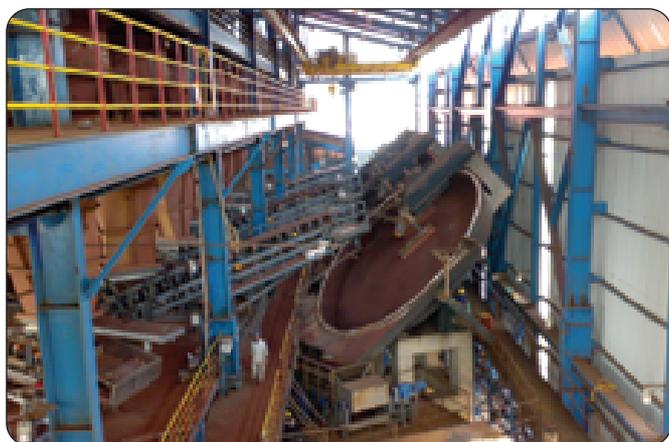
The process fans requirements are different for the two different technologies. Generally for the Straight Grate technology, the major process fans are Hood Exhaust fan, Updraught drying fan, Windbox Exhaust fan, Windbox Recuperation fan and the Cooling Air fan. In Grate Kiln technology, the major fans are Waste Gas fan, Air Blowing Dry fan, Annular Cooler fan, Cooling Air fan for Kiln Head/Kiln End, Cooling Air fan for chute structure at Kiln End, System Air fan for Wall Isolation and System Air fan for Coal Mill.

**Our Clients** : Rotoauto has indigenously designed, manufactured and supplied pelletising discs and process fans to some of the major pellet plants in India. Some of our prestigious clients are:

- 1 Hygrade Pellets Ltd (presently Essar Steel Ltd), Vishakapatnam (capacity 4MTPA) - 7500mm dia pelletising disc - Qty 7 nos.
- 1 Jindal Vijayanagar Steel Ltd, Bellary (4 MTPA) - 7620mm dia pelletising disc - Qty 1 no.
- 1 BMM Ispat Ltd, Hospet (1.2 MTPA) - 7500mm dia pelletising disc - Qty 2 nos.
- 1 JSW Steel Ltd, Bellary (4.2 MTPA) - 7500mm dia pelletising disc - Qty 1 no.
- 1 Jindal Steel & Power Limited, Barbil (4MTPA) - 7600mm dia pelletising disc - Qty 6 nos.
- 1 Brahmani River Pellets Ltd, Jajpur (4 MTPA) - 7500mm dia pelletising disc - Qty 6 nos.
- 1 Essar Construction Ltd, Paradeep (8MTPA) - 7500mm dia pelletising disc - Qty 10 nos.
- 1 Orissa Manganese & Minerals Ltd (Adhunik group), Kandra, Jhamshepur (1.2 MTPA) - 6000mm dia pelletising disc - Qty 4 nos. (current project)
- 1 BMM Ispat Ltd, Hospet (1.2 MTPA) - 7500mm dia pelletising disc - Qty 4 nos. (current project)
- 1 JSW Steel Ltd, Bellary (4.2 MTPA) - 7600mm dia pelletising disc - Qty 6 nos. (current project)
- 1 Hygrade Pellets Limited (presently Essar Steel Ltd), Vishakapatnam (4 MTPA) - process fan - Qty 5 nos.

- 1 Brahmani River Pellets Ltd, Jajpur (4 MTPA) - process fan - Qty 5 nos.
- 1 Orissa Manganese & Minerals Ltd (Adhunik group), Kandra, Jhamsshedpur (1.2 MTPA) - process fan - Qty 5 nos. and spare rotor assembly - Qty 2 nos. (current project)
- 1 BMM Ispat Ltd, Hospet (1.2 MTPA) - process fan - Qty 12 nos. (current project)

**Concept to commissioning at Rotoauto** : With multiple facilities under its belt, Rotoauto has in-house end to end infrastructure to convert steel to finished products. They include a range of heavy precision machines, large fabrication shops, plate bending and forming machines, heat treatment furnace, dynamic balancing machines etc. Engineers at Rotoauto are trained and evaluated periodically to assure stringent quality standards in manufacturing. Manufacturing stages are seamlessly



integrated for verification by third party inspection agencies such as Lloyds Registrar of shipping, Indian Registrar for shipping, SGS, Germanisher Lloyd, Tata Products services, DNC, Fichtner consultants and National Thermal Power Corporation.

Best inventory management techniques, efficient production controls and co-ordinated teamwork ensures that reliable products are consistently delivered in reasonably short time period. Process fans at Rotoauto are designed with 3D CAD systems. This ensures accurate assembly and fitment of various parts. Prototype fan designs are validated in test-ducts with computerized data acquisition systems. With complete capability to design fans in-house, it is possible at Rotoauto to develop and supply wide range of Axial and Radial fans.

Post sales product support is one of the core strengths of Rotoauto. Based on stringent evaluation, Rotoauto has over the years developed a strong supply chain that comprises of reputed brands such as Flender, Elecon, Siemens, Timken, ABB, Schneider Electric, etc. Material sourcing is done worldwide based on quality and competitiveness. This further enhances the quality of the equipment in whole and imparts a multi-pronged approach to technical support during equipment selection, commissioning, trials and maintenance. Further,



Rotoauto sources quality raw materials such as quenched/tempered steel plates, forgings, etc. from majors such as Thyssen Krupp Steels Germany, SSAB Oxelosund Sweden, Scot Forge USA, Federal steels USA, Corus UK and Wuxi steel China. With Rotoauto's indigenous capability to supply pelletising disc and process fan assemblies; inventory of critical long-lead-time spares; and performance guarantee(s) issued, the client is assured of long term operational gains.

**Extension of Services** : Rotoauto deploys its skilled technical services and infrastructure for providing replacement parts for equipment of Chinese/other origin. A number of components have already been supplied for such pellet plants.

While core competency of Rotoauto is in supplies of plant equipment, the company also liaisons with a number of technical consultants and firms for successful plant deployments. This enables Rotoauto in assisting prospective Iron Ore pellet producers in choosing technical consultants.

Rotoauto Engineering Solutions is an organization that is on a steady growth track. It is a company that enjoys a market view of being quality suppliers at competitive prices. The core of the company has strong business fundamentals that protect its client's interests first. It periodically reviews and upgrades its policies and procedures on products and processes for better results. This in-turn has resulted in a number of repeat orders over the years from clients. Corporate social responsibility at Rotoauto lends itself to support a number of organizations to benefit childcare and women's welfare.

...So look no further

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