

Advanced Ore Washing Systems

OreMax™ is CDE's highly evolved washing station for washing and upgrading various mineral ores, particularly iron ore including lumps, fines, mines overburden, or stockpiled iron ore reserves.

OreMax™ is a combination of several innovative technologies (attrition, hydrocyclone density separation, dewatering, water management) in a single, integrated, and rapidly set-up system, ideal for deployment either within your operating mine, or at a central material processing point. In combination with our unique AtroFeed material delivery and attrition system the OreMax™ is highly attractive whether you operate your own ore mines with in-line blast furnaces / kilns / sponge iron / pelletising processes or you are an ore exporter or reseller.

Each system can be custom designed according to your specific materials and requirements but the most popular example is our OreMax™ turnkey system. This offers plus 5mm and minus 5mm washed ore products from minus 20mm feeds of 80-100tph is a highly compact and readily setup washing station. In the case of iron ore, Fe improvement is achieved for both the plus and minus 5mm fractions and silica and alumina are both dramatically reduced. Importantly this unit is highly versatile and can accommodate variable feeds which not only suits ore merchants, but also makes the system more flexible for captive mine operators.

In the case of iron ore, even small improvements in the quality of the materials can have a significant impact on both the final product quality and on the cost of production.

The Institution of Engineers (India) paper 'Quality of Raw Materials - a Key to Cost Reduction' notes the potential benefit of using washed ore:

"Increase in Fe in iron ore burden by 1% will increase productivity of hot metal by 1.5-2% and decrease coke rate by 0.8-1.2%. In terms of Rupees, it amounts to a cost reduction in hot metal by Rs 60/thm – Rs 70/thm.

- Lowering of alumina in iron ore burden by 1% will reduce the cost of hot metal by Rs 200 – Rs 250/thm.
- Lowering of silica in iron ore burden by 1% will reduce the cost of hot metal by Rs 50 – Rs 100/thm.
- Reduction in undersize in iron ore lump by 1% will reduce the cost of hot metal by Rs 50 – Rs 60/thm.
- Reduction in fluctuation in Fe chemistry by 1% will reduce the cost of hot metal by Rs 40 – Rs 50/thm.

Even if 0.5% reduction in alumina in the burden to BF, 5% reduction in undersize and improvement in chemical and physical consistency is achieved, it is expected that saving to the tune of Rs 150 Crores <circa \$3.8m> per year can be achieved for a 4 Mtpa hot metal production plant."

CDE's formidable materials washing experience coupled with our unique product range and customer focussed project teams guarantee the maximum return from your ore stocks. This brochure is simply an introduction to the systems we offer; to learn more about how we can contribute to your processes please contact us directly to speak to one of our ore washing specialists.



The Power To Deliver



CDE are proud to support Kolkata Jungle Crows, see www.junglecrows.com for more information

CONTACT

CDE Asia
8th Floor, Park Plaza,
71 Park Street,
Kolkata 700 016
India

T: +91 (0)33 3028 2080
F: +91 (0)33 3028 2082
E: info@cdeasia.com

CDE Head Office
Ballyreagh Industrial Estate,
Sandholes Road,
Cookstown,
Co Tyrone,
BT80 9DG

T: +44 (0)28 8676 7900
F: +44 (0)28 8676 1414
E: info@cdeglobal.com

Iron Ore Washing Systems

ORE
MAX
ATRO
FEED
AQUA
CYCLE

AtroFeed is CDE's unique feed delivery system for minus 20mm. The design not only slurrifies feed for subsequent screening and washing but it also imparts extreme attrition to your material. This makes the system invaluable for plastic and contaminant bound or dirty feeds; particularly minus 5 and 10mm materials. Heavy attrition at this first stage of material handling ensures the highest levels of efficiency from downstream processing to wash and classify, for example in removal of low density (silica / clay / alumina) contaminants from iron ore feeds.

Furthermore the AtroFeed eliminates the need for traditional feed conveyors, substantially reducing the footprint of your installation and making conveyor alignment and setup issues problems of the past.

The AtroFeed system fluidises and simultaneously imparts high attrition to your feed material in a single rapidly installed unit. AtroFeed allows easy set-up on level ground without the need for costly civil preparations and is the ideal partner to feed CDE's OreMax™ washing equipment series.

- Instant fluidisation and attrition of your feed material
- Ideal for agglomerated and clay bound feeds
- Improves the efficiency of downstream washing / classification
- Eliminates the need for feed conveyance
- Minimal footprint and rapid installation



ORE MAX

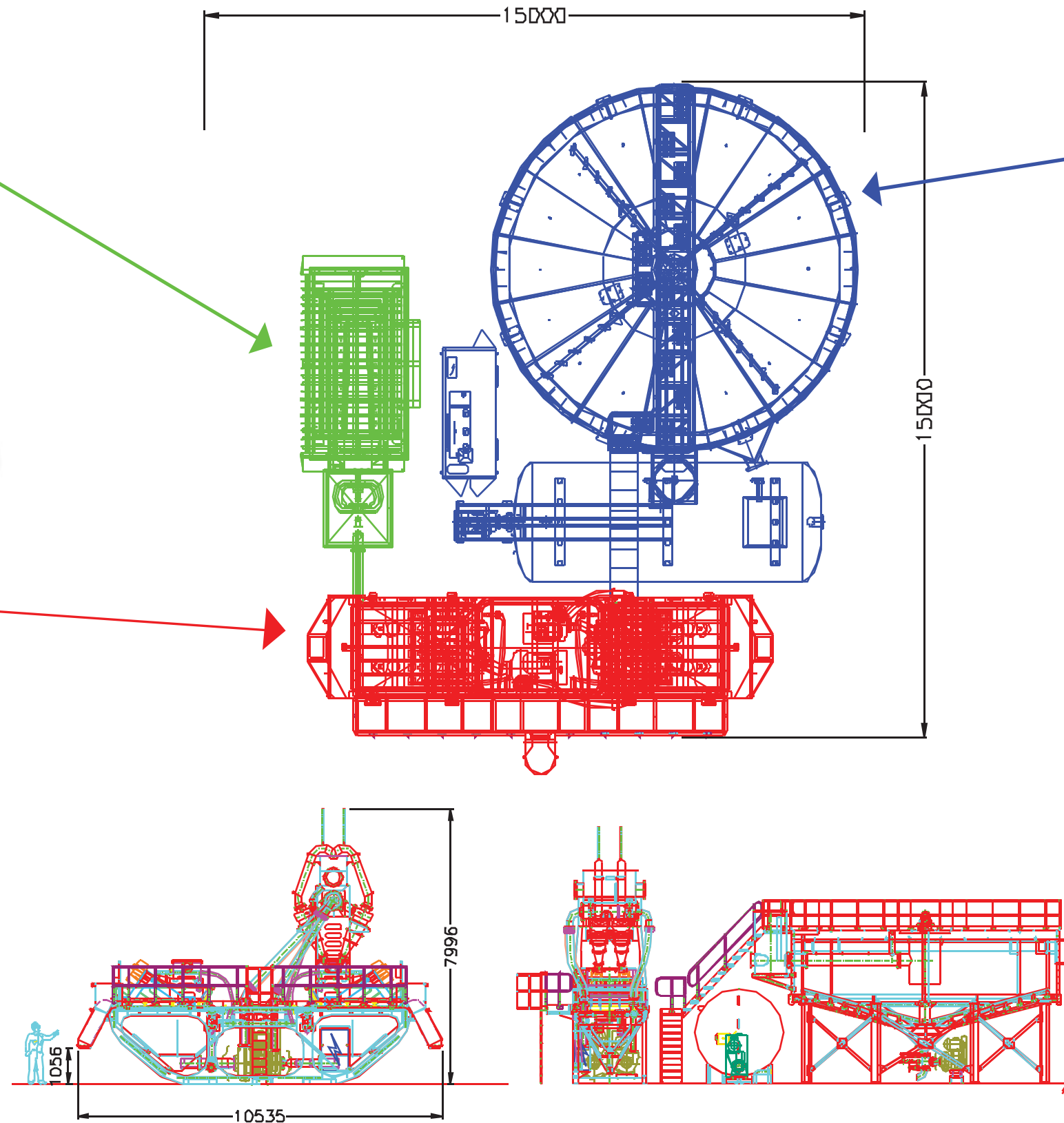
The OreMax™ releases the true potential within even the lowest grade feed stocks. Accurate density separation coupled with the extreme attrition offered by the integrated AtroFeed delivery system generates final ore product with maximum Fe value and substantially reduced silica, clay and alumina content; ideal for downstream processing in furnaces or kilns.

- Self contained complete system – instantly ready to work on your material
- Rapid installation
- Minimal footprint
- 80-100tph capacity for <20mm ores including overburden and low grade fines
- Ideal for your blast furnace / sponge iron and pelletising applications
- Significantly reduced alumina – increased blast furnace / kiln capacity & higher quality outputs
- Significantly reduced silica – increases efficiency in your furnace / kiln; reduced power costs
- Significantly reduced clay – in line with required material specifications
- Substantially enhanced Fe value – improved final product quality / ore value; allows full use of your low grade reserves
- Readily integrates with AtroFeed system for attrition and rapid installation
- Complete with water recycling options for complete project management



Compact – Integrated - Efficient

CDE's latest generation washing system for iron ore; at the heart of this is the CDE OreMax™, a revolutionary system bringing the full benefits of advanced ore washing technologies in a single integrated station. This turnkey package brings you a complete washing station inclusive of water management and ancillaries at a fraction of the cost of traditional systems whilst offering the highest quality consistently washed products.



Small footprint water recycling systems for maximum operating efficiency and easy tailings management. Can be sited immediately adjacent to a CDE washing system for minimal footprint. Wash water can be fed directly to the AquaCycle, eliminating the need for secondary pumping. The fully automatic FlocStation polyelectrolyte dosing system ensures minimal flocculant usage (5-7 times less than alternatives).

- Rapid settlement of tailings – massively reducing land requirements and secondary handling costs
- Instant water recycling to the wash system reducing water losses and environmental impact
- Consistent sludge density; greatly assists in next stage handling or management by a Filter Press
- Dramatic reduction in waste volumes – frees up more of your space and time for actual processing



Turn-Key Applications

So that you can start processing your material as quickly as possible CDE take the effort out of setting up an installation: We are your partner from concept through to full after sales and the highly integrated CDE systems available incorporate all required equipment and ancillaries. Every aspect of the installation is offered including stockpiling, electrical, and water management.

- Mobile radial stockpilers
- Water storage and recycling system complete with pumps
- Skid mounted – rapid set-up design
- Built-in controls

Fully Tailored Services

CDE fully recognise that no two materials or customers are the same. Our unrivalled experience with varied applications across the globe is brought to bear on each new project and every customer is given the complete 'CDE family' service regardless of the individual project size.

Our professional engineering and design teams in Europe and Asia work together to bring the latest technology to every customer; reflected in our constant product development and systems evolution. Your CDE system is built to meet your needs rather than generalised market trends, drawing on our broad range of equipment and services. In addition to the key product series noted here we also offer state-of-the-art screening equipment and high capacity RotoMax Log Washers. All of these industry leading technologies are brought together to build unique and specialised installations for any capacity and for the most demanding requirements.