



Circulating Fluidized Bed Coal Gasifiers

CASE® has had a global presence in the industrial world for more than 25 years. CASE® established itself in the early 1990's and since then has been relentlessly working in the variable fields of Industrial Engineering Activities. CASE® has accomplished a high level of excellence in the manufacturing of the equipments and services provided by it. CASE® has its corporate office cum headquarters situated at National Capital Region, India.



CASE® offers a wide range of state-of-art-the technologies for Coal Gasifiers, Cooling Tower Solutions, Air Pollution Solutions, SCALE-BAN™- Non chemical online water scale preventor , Direct Reduced Iron and critical machinery for Steel Rolling Mills like HSS (High Speed Steel) Rolls, Block Mills, High Speed Finishing Mills etc. The organization aims to deliver globally, the best of quality products at the most economic rates within minimum lead times. "CASE® believes on 'Working for a Safer and a Cleaner Tomorrow'".

CASE® designs and manufactures products, which are specifically required for the purpose. The materials used are carefully selected to ensure the highest standards of performance and to guarantee the consistent quality. All products are subjected to rigorous quality control procedures prior to delivery. The relevant standard authorities and professional associations regularly assess our operative skill and competency.

Our aim is to provide the plant designer, constructor and operator with an efficient, reliable and economical facility. Our products are wholly approved and accepted by all the INDIAN GOVERNMENT ORGANIZATIONS.

CASE® has manufacturing unit situated at Bahadurgarh to cater to the client's needs all over India and abroad. Our works is equipped with the latest technological advancements required for processing and fabrication. These products are scrutinized through our stringent quality control cell, which ensures an excellent product quality.



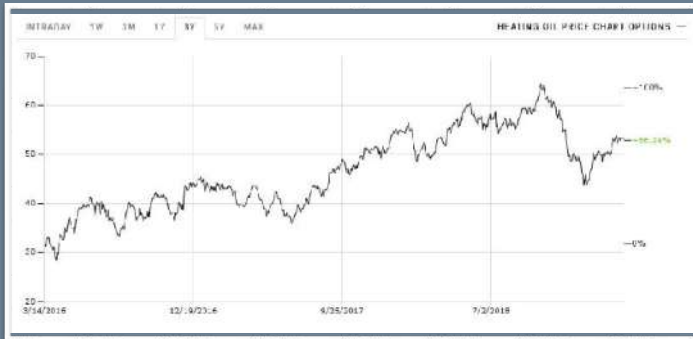
CASE® is an ISO-9001:2015 certified company. CASE® is also member of the prestigious COOLING TECHNOLOGY institute, USA. which makes sure that we offer international technology at Indian rates.

CASE® has entered into many strategic partnerships with overseas companies for a number of different technologies. These partnerships are a result of our in-depth experience and the technical know-how which we possess. Understanding the importance of technological advancements has been the driving force for these partnerships. By synergizing technology and cost competitiveness, we have been successfully able to introduce many anew systems which have been extremely beneficial for the Indian Industry.

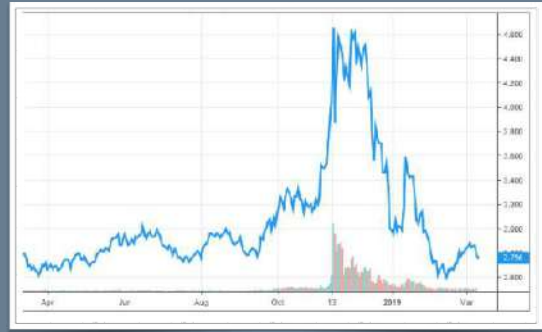
Welcome to CASE® Group and feel free to explore the world of Engineering experienced through the eyes of CASE®.

The need for CFBC Gasification in India (substitute high cost fuels)

The **rising/volatile** costs of alternate fuels like Furnace Oil, LSHS, HFO, LDO, SKO, NG, LPG etc.



Heating Oil



Natural Gas

(feed stock fines vs lump coal)

Increasing **cost and availability** of sized coal which is required for fixed bed gasification.



Coal Fines

VS



Lump Coal

- Availability
- Cost
- Wastage

(alternate to fixed bed gasification)

Ever so increasing **environmental concerns**.



Tarry Wastes



Condensate



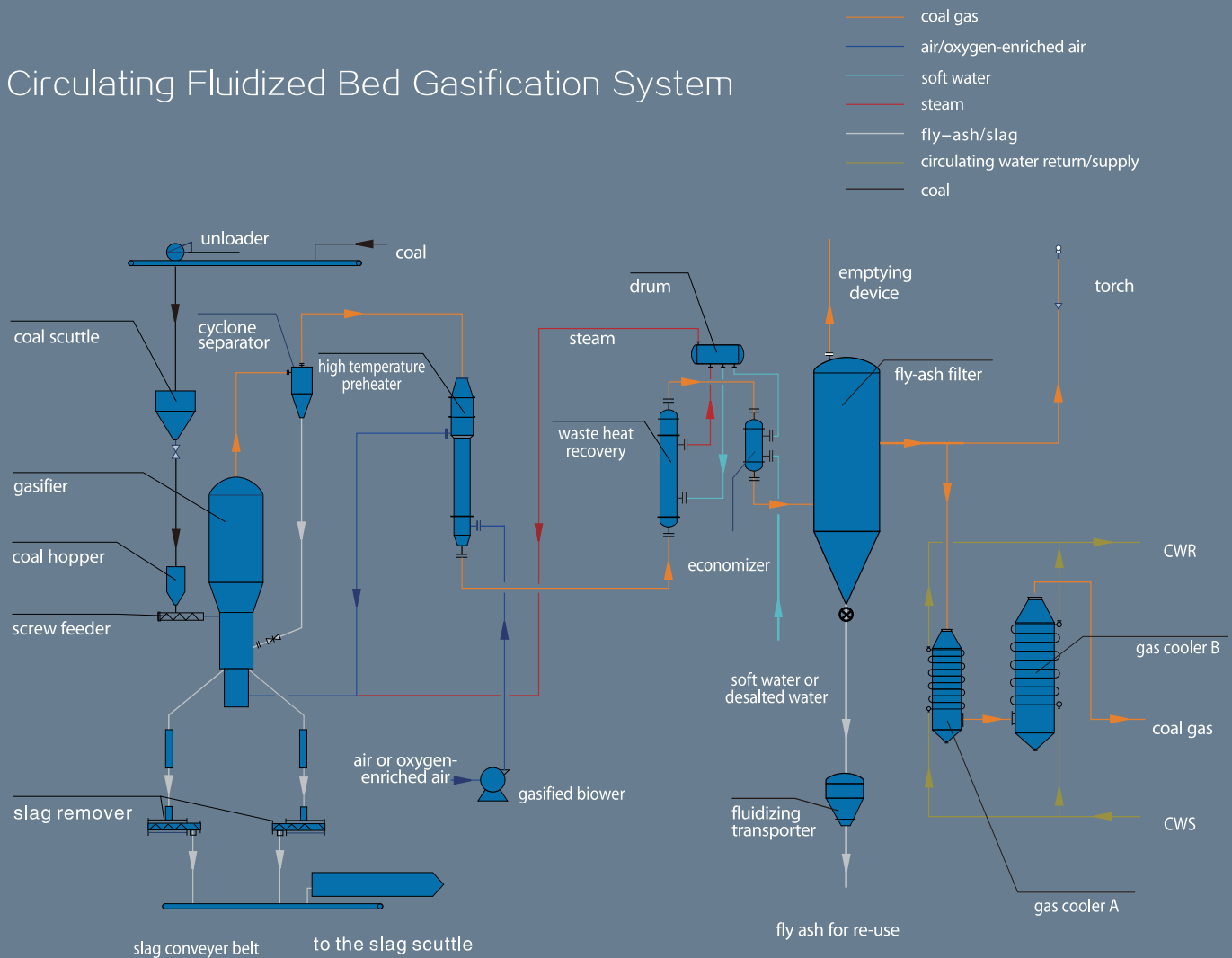
Coal Dust

AIR, WATER & GROUND POLLUTION

PROCESS FLOW & TECHNOLOGY

CASE clean coal gasification equipment mainly comprises of a coal storage, processing and conveying system, gasification system, flyash removal system, desulphurization system, compressing system, pneumatic conveying system, water treatment system, DCS operating system etc. It includes circulating fluidized gasification system and atmospheric/ low pressure entrained-flow gasification system which is designed for safety, cleanliness, efficiency and economic operation.

Circulating Fluidized Bed Gasification System



Flow Chart

Process Flow:-

After crushing and sieving, the coal (size<10mm) is carried to coal scuttle by conveying system, to gasifier top hopper. Coal is injected into the gasifier by screw feeder; and is made to react with gasification agent (air or oxygen-enriched air and steam) which is preheated to high temperatures by passing it through heat exchangers.

Coal gas flows through cyclone separator, high temperature pre-heater, water heat recovery, fly-ash filter and gas cooler A/B for cooling down and dust removal. After de-sulphurization and compression, the gas can be sent to utility for combustion.

Features:-

Clean: no discharge of tar, phenol-cyanogen waste-water; almost the same cleanness as natural gas.

Efficient: with full counter- current heat transfer, more than 90% of gas sensible heat can be recovered; high-temperature combustion technology can significantly increase gas calorific value.

Low cost: fine coal can be used, the cost of gas production can be significantly reduced.

High output: 10kNm³/h, 20kNm³/h, 40kNm³/h, 50kNm³/h, 60kNm³/h, available, and load range can be adjusted.

Safe and stable operation: perfect safety protection interlock, one-button parking: key equipment can be replaced online.

Gas composition

If the mixture of air and steam are used as gasifying agent, the gas composition are as follows:

Component	CO	H ₂	CH ₄	CO ₂	N ₂	Qnet/kcal/Nm ³
(%) Vol.-%	20~24	18~22	1~3	8~12	45~50	≥1250

If 30% oxygen-enriched air and steam are used as gasifying agent, the gas composition are as follows:

Component	CO	H ₂	CH ₄	CO ₂	N ₂	Qnet/kcal/Nm ³
(%) Vol.-%	23~26	23~26	2~3	12~14	30~35	≥1550



SERVICES:-

CASE provides economical coal-based clean fuel, and a set of energy solution for the customer.



Technology Features

Gas Pressures up to 50KPa

**Plant Capacities
10k-60kNm³/Hr in single cell**



100% substitution
of
high cost fuels



Low cost, readily available
coal fines are used

Zero tar

Zero Phenol

Dust <10mg/Nm³

**Gas Calorific Value
>1300Kcal/Nm³**



Fully automatic,
zero
manual intervention







CASE CORPORATE OFFICE

CASE GROUP

117, CHARMWOOD PLAZA,
CHARMWOOD VILLAGE, SURAJKUND,
FARIDABAD, HARYANA-121009, INDIA
TEL: +91-129-4266666
Website: www.casepl.com
E-mail: case@casepl.com

