

# IAEC

## IAEC (Calcutta) Pvt. Ltd.

### BROCHURE

A COMPLETE POLLUTION CONTROL  
MECHANICAL & VENTILATION ENGINEERS



FUME EXTRACTION SYSTEM



CYCLONE & BAG HOUSE



SCRUBBER



FORCED DROUGHT COOLER



PNEUMATIC DAMPER



IMPELLER



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## **COMPANY OVERVIEW**

IAEC (CALCUTTA) PRIVATE LIMITED, ONE OF THE LEADING COMPANIES IN AIR AND POLLUTION CONTROL TECHNOLOGY. IAEC, ESTABLISHED IN KOLKATA (WEST BENGAL) IN THE YEAR 1949 KNOWN AS "THE INDUSTRIAL & AGRICULTURAL ENGG. CO. (CALCUTTA) PVT. LIMITED" AND NAME CHANGED TO "IAEC(CALCUTTA) PVT. LTD." IN THE YEAR 1995.

OUR PRODUCT RANGE INCLUDES CENTRIFUGAL FANS & EXHAUSTERS WITH CAPACITY UPTO 3,00,000 M<sup>3</sup>/HR AND PRESSURE UPTO 2500 MMWG, DUST COLLECTION & AIR HANDLING SYSTEM, AIR VENTILATION SYSTEM, ELECTROSTATIC PRECIPITATOR, WET SCRUBBER, VENTURE SCRUBBER, PULSE JET FILTER, CYCLONE, ROTO-CLONE, BAG FILTER, BENDING & FOLDING MACHINE.

THE BLOWERS ARE MANUFACTURED BASED ON DRAWINGS OBTAINED FROM SOVEX, FRANCE AND DRAWINGS FROM AMERICAN AIR FILTER CO. FOR EXHAUSTERS, DUST COLLECTION SYSTEM SUCH AS ROTO-CLONE ETC. WE ARE ALSO DOING SERVICING & BALANCING JOB AS PER CUSTOMER'S REQUIREMENTS.

IN THE YEAR 1989, UNDER THE TECHNOLOGY UP GRADATION SCHEME OF GOVT. OF INDIA, OUR COMPANY WAS SPONSORED BY UNDP AND CII AND WE ENTERED INTO AN AGREEMENT AND OBTAINED DETAILED DRAWINGS, DESIGN AND COMPUTER SOFTWARE FROM M/S. ROTAMILL GMBH, GERMANY FOR MANUFACTURE OF HIGH PRESSURE, HIGH EFFICIENCY CENTRIFUGAL FANS.

IAEC IS RENOWNED FOR OFFERING TOTAL SOLUTION FOR CHEMICAL PLANTS AND EQUIPMENTS. WE PROVIDE ACID FUME SCRUBBING SYSTEM WITH A COMBINATION OF PACKED TYPE SCRUBBER, DUCTING, PIPING, CENTRIFUGAL EXHAUST. WE ALSO PROVIDE TOTAL SOLUTION FOR DUST EXTRACTION SYSTEM & VENTILATION SYSTEM WITH A COMBINATION OF DUCTING, HOOD, GRILL, BAG FILTER AND CENTRIFUGAL BLOWER.

EVERY PRODUCT BY IAEC IS DESIGNED TO MEET & CATER TO THE SPECIFIC NEEDS OF THE CUSTOMER.

WE UNDERTAKE GENERAL FABRICATION JOB AS PER CUSTOMER'S REQUIREMENTS AND THEIR DRAWINGS AND DESIGNS. OUR CUSTOMER LIST INCLUDES STEEL AUTHORITY OF INDIA, TATA STEEL, TATA MOTORS, HAL, AND VIZAG STEEL PLANT AMONG OTHERS. WE HAVE ALSO SUPPLIED A NUMBER OF FABRICATED ITEMS TO SMS DEMAG PVT. LTD FOR THEIR VARIOUS CLIENTS AND PROJECTS.

ALSO WE HAVE THREE DEDICATED MANUFACTURING UNIT IN CHATLA, KOLKATA (18,000 SQ.MTR); BEHALA, KOLKATA(15,000 SQ.MTR) & BALITIKURI, HOWRAH(16,000 SQ.MTR) WITH 5 TON, 3 TON & 1.5 TON OVERHEAD HOIST AND MODERN MACHINERIES.

**IAEC**

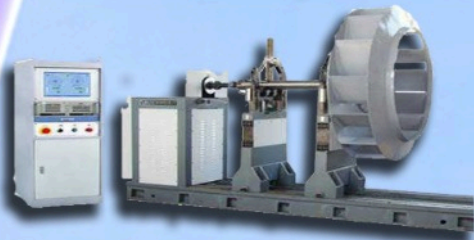
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# PRODUCT RANGE

IAEC can design composite structures that take high structural loads and safety factor for making them ideally suitable for infrastructure, quality infrastructure composite parts such as scrubber, pickling tanks and blowers have been known, generally, to be successful in service for up to 60 years or more.

## ON SITE BALANCING SERVICE

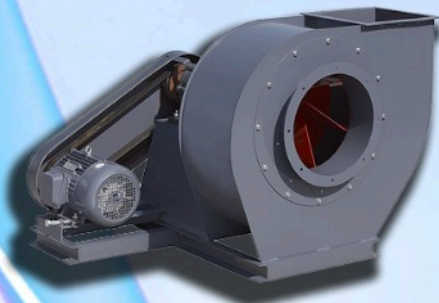


On-Site Balancing Service helps to you in providing a practically efficient method for test facilities, assembly & plant maintenance. This service is delivered without dismantling the machine thereby minimizing the down time, labour cost as well as production loss.

Advantage of On Site Balancing -

- \* Saving operation of your machine from going in breakdown state
- \* Saves electricity power of your drive motors of all the equipments
- \* Saves you're dismantling and re-assembly time & money for balancing
- \* High accuracy achieved as total assy. balancing is done at its operating rpm and in its own operating environment, bearing housing & structure.
- \* Saves your transport, follow-up, production loss, down time, break down loss
- \* Increase performance of machines
- \* Minimize vibration sound.

## CENTRIFUGAL BLOWER



IAEC Centrifugal Fans & Exhausters are based on drawings and software obtained from M/s. Rotamill GmbH, Germany. Blade Type : Aerofoil, Backward curve and partially radial bladed. Drive - Direct drive blower , v belt drive blower and coupling drive blower.

IAEC Centrifugal Fans & Exhausters are known as 'RO' 15/25/35/50/75.

**Feature :** \* High efficiency upto 90% \* Minimum maintenance \* Adjustable Discharge \* Easy installation . \* Dynamically balanced impeller \* Software to design bigger fans than the standard available.

**Application :** Ventilation, Dust Collection. Air Conditioning, Oil, Gas, Coal, Biogases, Wood & Husk Fired Boilers, Fluidised Bed Boilers, ID Fans. Industrial Burners, Pneumatic Conveying. etc.

**Range :** Capacity - upto 3,00,000 m<sup>3</sup>/hr Pressure - upto 2500 mmWG. Single.

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## DRY TYPE DUST COLLECTION SYSTEM (PULSE JET FILTERS)



The Pulse Jet Filters Type is rigidly constructed with the cleaning of bags carried out by high pressure compressed air. Filters are fabricated in modular construction. Sequence of the operation of the Solenoid valves is controlled by a solid state timer.

**Feature :**

- \* Can withstand high negative pressure because of rigid construction.
- \* Inspection & maintenance of filter bags can be carried out from clean air side without entering dirty air chamber, thus the maintenance man can work under clean working conditions.
- \* Identification of the damaged filter bags and changing of these can be carried out in no time compared to other filters
- \* Modular construction as a result the entire bag house need not be shut for maintenance.

**Application :** Chemical & Processes industries, Cement & Power Plants, Sand & Shot Blasting Machines, Foundries etc.

**Range :** Capacity upto 4,30,000 m<sup>3</sup>/hr



## REVERSE JET FILTER UNIT



The range of reverse jet filter units are designed to cater for more specialist dust that cannot be handled by the standard shaker type filter systems. Reverse jet/reverse pulse units are normally required where a constant air volume is needed without possibility of the equipment being shut off for cleaning. To achieve this maintenance of the designed air volume at pre-determined intervals a burst of compressed air is released from the reservoir

on the unit inducing a shock wave and short back flow of air into the cartridges or bags. This breaks free the dust cake formed on the outer surface of the cartridge or bag, allowing this to then freely fall into the hopper at the base of the unit. This is all controlled automatically with an electrical panel mounted on the unit.



## FORCED DRAFT COOLER (F D COOLER)



The F D Cooler is an air-to-air heat exchanger. It contains with bank / banks of tubes placed vertically (now a day) and hot gas is passed through the inside of the tubes. Fans usually axial flow is employed to supply ambient air which passed outside the tubes. Generally in industries, forced draft cooler is used for heat exchanging primarily because of the advantage of less power consumption.

**Features :** \*Upto 200 degree C temperature reduce \*High efficiency \*Heavy dust particles removal \*Less power consumption \*Operated at high temperature.

**Application :** Ferro Alloy Plants, DRI Plants etc.

**Range :** Upto 10,00,000 Am<sup>3</sup>/hr.



## FUME EXTRACTION SYSTEM



IAEC (Calcutta) Pvt. Ltd. offers a solution for every application specially for Steel plants, Captive power plants and other industries. We design, manufacture & supply complete system including the all spairs of fume extraction system with your specifications and requirments. We offer optimized tecinical solution.

**Features :** \*Upto <30 mg/m<sup>3</sup> or less emition \*High durability \*Low power consumption \*The Collection efficiency is very high even for small particles \*Can handle large gas volume, heavy dust loads at low pressure.

**Application :** Production plants for steel melting shop, ferro aloy plant and other industries.  
Iron & steel production (ore processing, blast furnaces, converters).



## SCRUBBERS



This equipment is used to purify exhaust gas through its internal special filling pieces which enlarge the surface between exhaust gas and fluids. The entire Pollution control System consists of the following equipments and components.

- Scrubbers
- Centrifugal Exhaust Blowers
- Fume Collection Hoods
- Ducts
- Chimney

**Material of Construction :** FRP moulded & filament wound using Isophthalic, Bisphenol, Epoxy Resin - PP & HDPE Spiral Wound - PP/FRP, SS304, PVC/FRP, CPVC/FRP, PVDF/FRP, FEP/FRP

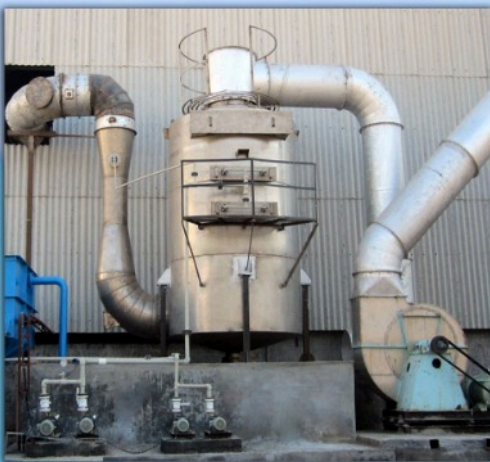
Packed bed Scrubbers are packed with Hollow Thermoplastic elements such as dumped razing rings or poll rings which are fluidized by the ascending gas stream as it passes counter current to the descending scrubbing liquid. Removes soluble gases like HCL, Cl<sub>2</sub>, Br<sub>2</sub> and NH<sub>3</sub>, SO<sub>2</sub>/ SO<sub>3</sub>, H<sub>2</sub>S.& NO<sub>x</sub>.

**Application :** Chemical Plants, battery industry, chemical plating shop etc.

**Range :** Upto 1,00,000 m<sup>3</sup>/hr.



## WET TYPE DUST COLLECTION SYSTEM (VENTURI SCRUBBER)



A venturi scrubber is designed to effectively use the energy from the inlet gas stream to atomize the liquid being used to scrub the gas stream. This type of technology is a part of the group of air pollution controls collectively referred to as wet scrubbers. A venturi scrubber consists of three sections: a converging section, a throat section, and a diverging section. The inlet gas stream enters the converging section and, as the area decreases, gas velocity increases (in accordance with the Bernoulli equation). Liquid is introduced either at the throat or at the entrance to the converging section. The inlet gas, forced to move at extremely high velocities in the small throat section, shears the liquid from its walls, producing an enormous number of very tiny droplets.

Particle and gas removal occur in the diverging section as the inlet gas stream mixes with the fog of tiny liquid droplets. The inlet stream then exits through the diverging section, where it is forced to slow down.

**Venturis can be used to collect both particulate and gaseous pollutants, but they are more effective in removing particles than gaseous pollutants.**

**Features :** \*Upto 0.1 micron particles\* High efficiency \* Rugged construction \* Removal of fine fumes \* Operated at elevated temperature.

**Application :** Foundries, Chemical Plants Crushers, Power Plants etc.

**Range :** Upto 1,00,000 m<sup>3</sup>/hr.



## BLOWERS



IAEC Centrifugal Fans & Exhausters are based on drawings obtained from USA.

Type : K/HPK - radial

Drive – Direct drive blower , v belt drive blower and coupling drive blower.

**Feature :** \*High efficiency upto 75% Minimum maintenance \*Adjustable discharge \*Easy installation \*Dynamically balanced impeller.

**Application :** Dust collection, ID Fans, Pneumatic Conveying, etc.

**Range :** Capacity - upto 2,50,000 m<sup>3</sup>/hr Pressure - upto 1000 mm wg

**SPE type blower** These are available in two types -1) Long Shaving Wheel 2) Wool Wheel

**Application :** Pneumatic Conveying of long fibers, wool, cotton, rayon, trimming of metals, etc.

**Range :** Capacity - upto 90,000 m<sup>3</sup>/hr , Pressure - upto 400 mm wg



## DOUBLE INLET DOUBLE WIDTH (DIDW)



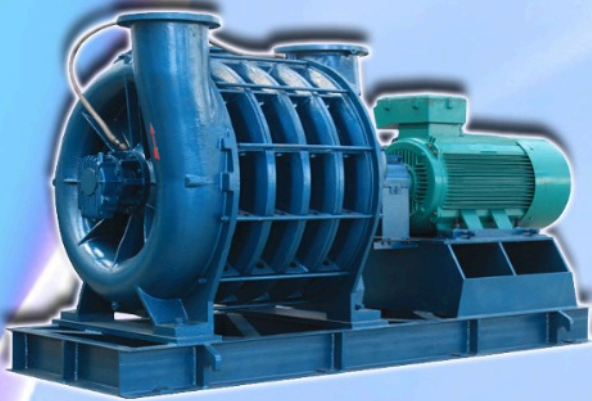
High efficiency (up to 82%) allowing to reach high savings in the consumption of electricity, Low noise. For a fan the source of noise is mainly the air turbulence created by the impeller. This series fan has been created to obtain the lowest noise thank to the aerodynamic profile of the inlet cone and of the static and dynamic balancing of the impeller.

**Application :** Suitable for the supply air for the various applications of the ventilation, air- conditioning and processes industry.

**Range :** Volume: from 1000 m<sup>3</sup>/h up to 1,00,000 m<sup>3</sup>/h , Pressure: from 20 mm wgp up to 400 mm wg.



## MULTISTAGE CENTRIFUGAL BLOWERS



IAEC Multistage Centrifugal Blower consists of a number of aluminium alloy impellers mounted on EN-8/ S.S. Steel shaft running in cast iron/cast aluminium body. Stage - upto 9 nos.

**Feature :** \* Delivery of oil free air / gas \* Surge proof type and therefore no overloading  
\*No internal lubrication \*High efficiency  
\*Easy installation \*Dynamically Balanced impeller \* Rugged Body.

**Application :** Pneumatic Conveying, Bio-gas boosting, Glass blowing, Agitation of liquids, Sewage disposal, Ore flotation, Air Scouring of Pressure filters.



## AXIAL FLOW FAN

IAEC heavy duty Industrial Exhaust Fan consists of Cast Aluminium variable pitch type Impeller mounted on motor shaft or EN8 Shaft driven by V belt drive.

**Type :** Tube Axial - Man Circulators - Man Cooler.

**Range :** Capacity - upto 2,00,000 m<sup>3</sup>/hr Pressure- upto 150mm wg.

**Application :** Exchange heat through environmental air, Cooling Towers, Air-Cooled Condensers and Air Cooled Heat Exchangers are typical applications.



## CYCLONE



Cyclonic action to separate dust particles from the gas stream. In a typical cyclone, the dust gas stream enters at an angle and is spun rapidly. The centrifugal force created by the circular flow throws the dust particles toward the wall of the cyclone. After striking the wall, these particles fall into a hopper located underneath.

**Features :** \*High efficiency, \*Long Service Life, \*Low operating & maintenance cost.

**Application :** General. Type : Single and Double cells.

**Range :** Capacity - upto 1,50,000 m<sup>3</sup>/hr.





## IAEC BEND & REBEND TESTING MACHINE (UPTO 200 TON)

THE MACHINE SERVES TO CONDUCT BENDING AND FOLDING TEST, AS WELL AS TO CONDUCT BENDING TEST IN ACCORDANCE WITH INDIAN STANDARD NO. IS:1599.

IAEC Bending & Folding Machines are working with the following Steel Companies:-

1) Lloyds Steel Industries Ltd., Wardha	...	1 no. 50 ton.
2) Jindal Vijayanagar Steel Limited	...	1 no. 50 ton.
3) Tata Iron & Steel Co. Limited	...	1 no. 25 ton.
4) Jindal Steel & Power Ltd., Raigarh	...	1 no. 100 ton.
5) Tata Steel Limited	...	1 no. 200 ton
6) Bokaro Steel Plant	...	2 no. 25 ton
7) Durgapur Steel Plant	...	1 no. 100 ton

The Machine Consists Essentially Of The Following Main Parts :-

**Base Frame** With Cylinder Is Build Up With Upper Top Frame By 4 Nos. Guide Pillars. The Cylinder Contains The Working Piston On Which Is Mounted The Bending Sliding Frame. The Bending Blocks With Rollers Are Adjustable By Means Of Lead Screws Which Is Electrical Operated By Geared Motors And Manually By Hand Whill.

The Interchangeable Bending Punches Are Fixed In **Upper Top Frame** By Means Of Links. The Machine Is Provided With Thrust Plates For Conducting Compression Tests In General And Rebend Tests In Particular. The Upper Thrust Plate Is Fitted In The Upper Top Frame, The Lower Thrust Plate On A Special Thrust Block On The Bending Table.

**Control Panel** For Press Operation, Indication Lamp, Volt Meter, Ameter, On / Off Main Switch And Additional Operating Console, Etc.

**Power Pack** Consists Of Control Pump, Oil Tank And Adjustable Pressure Relief Valve, Pressure Gauge With Isolator, Air Cooler Etc.



**Application :** Weld Specimens, Sheet Plate, Rails Wires And Strips, TMT Bars As Well As For Tempered Specimens.

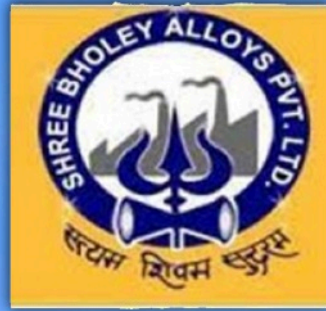
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# Our Estimated Clients



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**flexi** STRONG TMT REBAR

REAL<sup>TM</sup>  
ISPAT & POWER LTD.

SUPER SHAKTI<sup>®</sup>

ELECTROSTEEL

GALANTT  
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(An ISO 9001:2008 Certified Company)



NEELACHAL ISPAT NIGAM LTD.

maithan alloys ltd

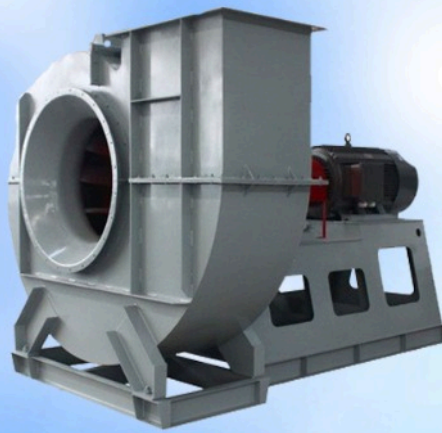


GUN AND SHELL FACTORY  
Cossipore, Kolkata

PRODUCTION OF STATE OF THE ART BATTLEFIELD EQUIPMENTS



# IAEC (Calcutta) Pvt. Ltd.



**Blowers, FD Cooler, Bag House & Gas  
Cleaning Plant upto 5,00,000 m<sup>3</sup>/hr**

**Expertise in pollution control & dust  
extraction equipment for Ferro Alloys, DRI,  
SMS Plants**

**We also take EPC / TURNKEY PROJECTS**

**IAEC**

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