



SUGAR PLANT PROJECTS



PROFILE OF GROWTH

INTRODUCTION

The company, now known as ASHOKA MACHINE TOOLS CORPORATION was established in the year 1974. In addition to itself it consists of a group of companies including ASHOKA TECHNOLOGIES, ASHOKA MACHORD PVT. LTD. and K.L KHANNA GEAR INDUSTRIES, all located within a 100 Km radial distance from New Delhi, the capital city of India- thus enjoying the facility of transport by road, rail and air to any part of the country as well as international locations.

The company began its manufacturing activities in a modest manner with the development and manufacture of light open gearing drives for cement and sugar plants. With much success and confidence the company diversified into manufacture of heavy duty and large open & closed drive systems for a variety of industrial applications, standardized as well as custom made gear reducers, equipment fabrication and various customized equipment spares not manufactured elsewhere in the country. Import substitutions of equipment and spares became the mainstream business that provided a thrust to the growth pattern.

The company began to expand the scope of its operations by designing and manufacturing of machinery for cement, sugar and steel plants. Going a step further, the company began to undertake complete turnkey projects, small to medium scale, in the field of cement, sugar and steel production.

THE WORKS

The company's main manufacturing facility is located at one of country's most well planned and developed export oriented industrial region of Greater Noida. The facility is strategically located on the outskirts of a major communication and financial center - New Delhi while its proximity with well developed ancillary industries ensures the availability of numerous raw materials and inputs. The facility is also ISO 9001:2000 approved by Det Norske Veritas of Netherlands.

Manufacturing is spread over an area of 4 acres of land and comprise of modern facilities of equipment fabrication, welding, assembly, machine shops, testing, stores, packaging, dispatch and administration. These together provide complete and self efficient facilities for medium and heavy fabrication needs. The machining capability is extensive and includes heavy floor/horizontal borers, milling machines, vertical turret lathes, large capacity gear hobbing machines, automatic plate cutting and welding equipment. Lifting capacity extends from a few kilograms to 75 MT using electric overhead cranes.

Testing offered includes non destructive testing such as ultrasonic test (UST), magnetic particle test (MPI), developer penetration test (DP), radiographic test (RT), bend test, chemical test, mechanical test, dimensional inspection etc. using modern and internationally recognized testing equipment and instruments.

Principal activities consists of planning, designing, manufacturing, testing, erecting and commissioning of sugar plants, cement plants and steel rolling plants. A variety of customized spares for plants under operation are also manufactured. Major raw materials such as castings, forging, mild steel and stainless steel plates for fabrication are outsourced from well developed ancillaries and suppliers which are approved as per companies ISO standards. All raw materials are duly tested prior to release for production.





LIST OF MACHINERY



GEAR HOBBIING MACHINES		
1.	WMW Gear Hobbing Machine Capacity: 8,500mm x 55 Module	1 No.
2.	WMW Gear Hobbing Machine Capacity: 6300mm x 55 Module	1 No.
3.	WMW Gear Hobbing Machine Capacity: 4000mm x 40 Module	1 No.
4.	TOS FO-25 Gear Hobbing Machine Capacity: 3200mm x 30 Module	1 No.
5.	TOS FO-16 Gear Hobbing Machine Capacity: 2000mm x 20 Module	3 Nos.
6.	WMW Gear Hobbing Machine Capacity: 1000 mm x 12 Module	1 No.
7.	CUIGER Gear Hobbing Machine Capacity: 800mm x 10 Module	2 Nos

VERTICAL TURNING & BORING MACHINES		
1.	NILES Vertical Turning & Boring Capacity: 8500mm x 2500mm Ht.	1 No.
2.	FRORIEP Vertical Turning & Boring Capacity: 6300mm x 2500mm Ht.	1 No.
3.	SIMPLEX Vertical Turning & Boring Capacity: 5000mm x 2000mm Ht.	1 No.
4.	BERTHIEZ Vertical Turning & Boring Capacity: 2600mm x 1000mm Ht	1 No.
5.	DORRIES Vertical Turning & Boring Capacity: 1500mm x 1000mm Ht.	1 No.
6.	BRADFORD Vertical Turning & Boring Capacity: 900mm x 800mm Ht.	1 No.

HORIZONTAL BORING MACHINES		
1.	SCHARMAN Horizontal Borer 240 mm Spindle with integral mill head & rotary table	1 No.
2.	COLLET & ENGELHART Borer 210 mm Spindle, Bed length 9600mm	1 No.
3.	COLLET & ENGELHART Borer 160mm Spindle, Bed length 3000mm	1 No.
4.	HMT Horizontal Borer (Russian) 130 mm Spindle, Table Type	1 No.
5.	UMB Horizontal Borer 100 mm Spindle, Table Type	1 No.

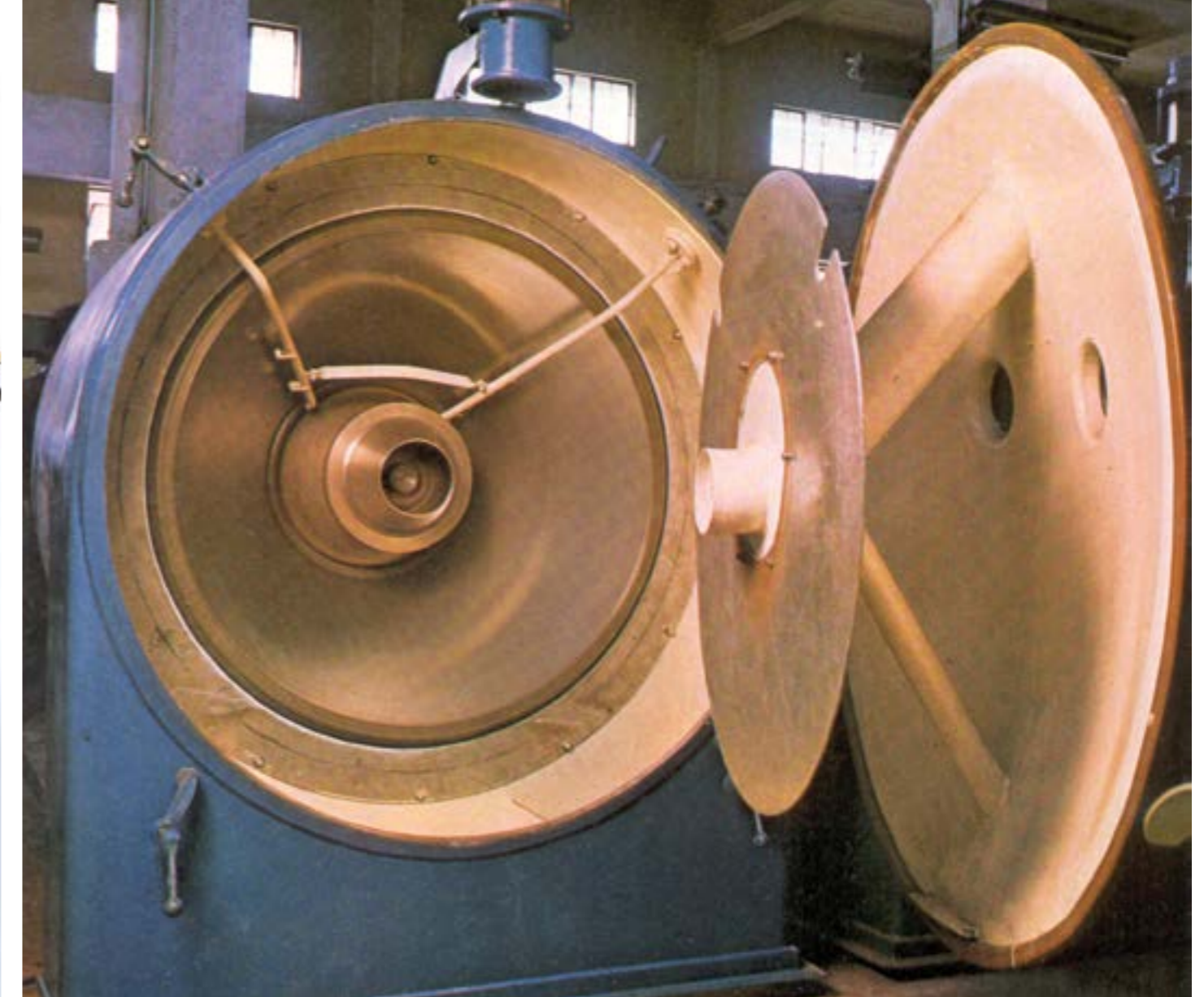
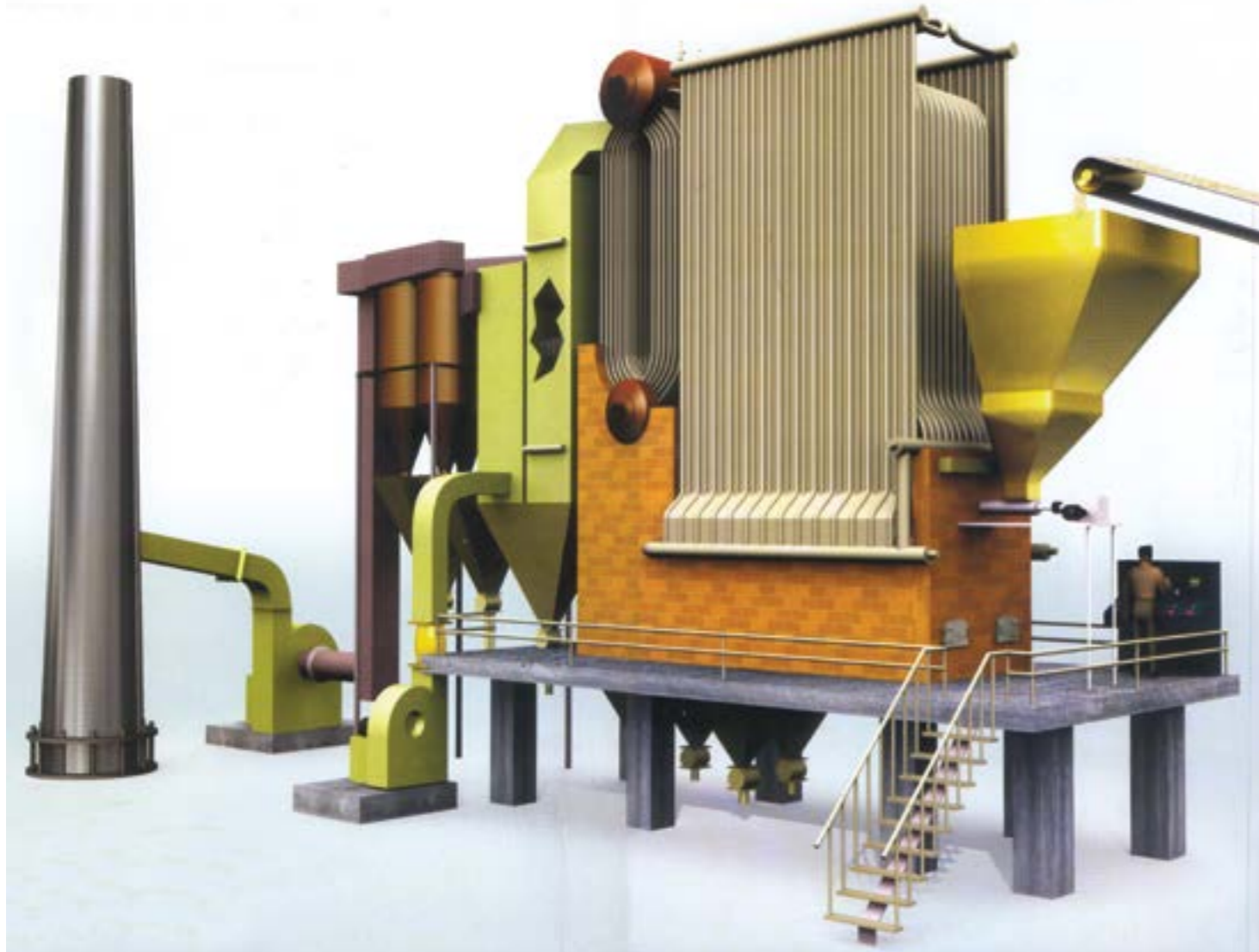
PLATE BENDING MACHINES		
1.	BERTSCH Bending Machine Capacity: Up to 100mm Th. Plate	2 Nos.

GEAR GRINDING MACHINES		
1.	MAAG HS 150S Gear Grinding Machine Capacity: 2000mm x 30 Module	1 No.

MISCELLANEOUS MACHINES		
1.	ROCKFORD Slotting Machine Capacity: 2500mm x 900mm Stroke	1 No.
2.	Slotting Machine Capacity: 500mm x 300mm Stroke	1 No.
3.	CRAVEN Worm Hobbing Machine Capacity: 1300mm x 20 Module Single/ Multiple Thread Wheels	1 No.
4.	KLINGELNBERG Worm Thread Grinding Machine	1 No.
5.	IKGEA Japanese Planer Capacity: 1400 mm W ,13 Ft. Bed Length	1 No.
6.	FORTUNA & TOS Cylindrical Grinder Capacity: 1000mm L	2 Nos.
7.	Internal Grinding Machine Capacity: 600mm	2 Nos.
8.	Dynamic Balancing Machine Capacity: 500 Kgs.	1 No.
9.	SHAPER (Horizontal) Machine Capacity: 24" – 40" Stoke	2 Nos.
10.	LATHE Machine, Capacity: 41/2' – 20'	15 Nos.
11.	NILES Lathe Machine Capacity: 1500 mm D X 6100 mm L	1 No.
12.	CARLTON Radial Drills Capacity: Upto 50 mm x 16 Ft Length	3 Nos.

WELDING & CUTTING EQUIPMENT		
1.	MIG & ARC Welding Machine Capacity: 400-600 Amp	4 Nos.
2.	Shell Rotators Capacity: 40 MT lifting capacity	2 Sets
3.	BURNTABLE Plate Profile Cutting PC Control, Capacity: 96" W x 120" L	1 No.

TESTING MACHINES		
1.	MAAG PF –60 Profile Tester Capacity: 600mm	1
2.	Measuring instruments including Tooth Verniers, Vernier Calipers, Micrometers, Bore Guage etc.	
3.	Non Destructive Testing: Ultrasonic testing machine, hardness tester, DP & MPI testing equipment	



SUGAR MACHINERY

Sugar can be produced from sugarcane or sugar beet. The process of extraction from each of the basic raw materials differs substantially and more so, a suitable process of clarification to suit the quality of raw material such as double carbonation/double sulphitation/defecation is adopted. The crystallization and centrifuging process practically remains the same for both the raw materials.

Ashoka has acquired the know how to cater to all the processes and has matched process and capacity for many factories which have been planned, designed and erected by it. The company undertakes sugar projects from small to medium scale capacities as mentioned below:

1. Open pan boiling sugar plants from 100TCD to 500TCD
2. Vacuum & pressure boiler boiling plants from 300TCD to 1500TCD
3. Sugar refinery from 10TCD to 500TCD
4. Turbine based power houses (power cogeneration) from 300TCD to 1500TCD

TCD: Tons of sugarcane crushing per day

Expansion of capacity or modernization of existing plants is also undertaken. Sugar machinery and spares to many plants all over the country have been successfully supplied. The range of supply includes a variety of machinery such as,

- Complete Sugar Plants
- Cane Unloading, Cane Cutters, Bagasse Handling and Transfer
- Juice and Molasses Storage Tanks
- Sugarcane Milling Tandems
- Sugar Centrifugals
- Vacuum pans, Evaporators, Juice Heaters
- Filter Presses
- Carbonation and Sulphitation Equipment
- Crystallizers, Sugar Dryers, Sugar Graders

In addition to the basic process machinery the company also offers co-generation plants including special purpose industrial boilers and steam generating turbines as well as water treatment plants of different designs and capacities. These are outsourced from reputed and well established businesses.



SALIENT FEATURES OF KEY MACHINERY

Industrial Boilers

Boilers are chosen based on high efficiency and use of modern technology keeping in mind the following parameters:

- Safety interlock and advanced system of boiler instrumentation and control for safe operation and monitoring and achieving higher efficiency
- Microprocessor based control systems such as PLC, SCADA etc. as per requirement.
- Top supported units allowing free expansion at the bottom.
- Multi-fuel application
- Provision of reliable fuel feeding, controlling, distributing system
- Chevron drier with horizontal steam separator for high steam quality
- Appropriate controls for maintaining constant superheat temperature over wide range.
- Furnace with membrane wall construction
- Easy access for each part
- High combustion volume and more retention time ensuring complete combustion
- Tall combustion chamber
- Large grate area
- Simple slat type traveling grate – S.S. grate
- Automatic draft control, bagasse feed control etc.

Boiling House Equipment

- Minimal power consumption
- Reduced steam consumption
- Special vapor bleeding systems along with pressure stabilization resulting in higher equipment throughputs

Cane Milling Tandems

- Latest designs are incorporated to obtain high cane crushing rates and efficiency
- Various types of drive options for flexibility and client suitability
- Special heat treated steels are used for rotating parts
- High machining accuracy and tolerances are obtained using specialized imported machinery
- Perfect alignment and cane feeding arrangements ensure better results
- The feed roller can be easily removed without dismantling the pressure chute or pressure feeder unit
- Least possible contact (nip) angle which leads to efficient mill feeding
- Lowest power consumption for a given crush rate
- Least apex angle of mill
- Compact, simple and robust design
- Extra space between mill-cheek inside face and roller shell-face for free juice drainage from sides
- Juice sealing ring arrangement for roller bearings
- Lubrication arrangement from both sides of bearings
- Low maintenance designs

Co-generation Plants

- Selection of boiler and turbine sets based on optimum steam and power balance
- High pressure and high temperature boilers with TG sets are supplied for better results
- Designed with most economic power consumption, leaving a substantial surplus from the sugar plant

Electrical & Instrumentation System

- State-of-the-art fully automatic electrical and instrumentation systems can be provided
- Emphasis on less manpower based on economic feasibility
- Provision of centralized or sectional control rooms as per customer requirements

ASHOKA is well poised for a great leap forward. In the vast span of over four decades the company has achieved an important position on the industrial map of India. The dynamic growth of the company is reflected both in the fast expansion of its product range and in the ever increasing orders being placed by satisfied customers. Foresight, competence and excellent team work have made this possible. And, through it all, an unshakeable confidence of being able to grapple with problems and convert them into golden opportunities.

TURNKEY PROJECTS



PROJECT SUPPLY

ASHOKA offers one stop solution for modern sugar plants, right from concept to commissioning. After obtaining the broad requirements from a prospect client the most suitable project in terms of capacity and equipment selection are worked upon by our specialists and experienced consultants. The shape of the project is then conceived by generating a pre-feasibility report (PFR) followed by detailed project report (DPR) by our technical as well as commercial evaluation groups. Proper project scheduling and contract programming is prepared using special computer aided software. Every contract is held to a time bound plan of action which is continuously monitored by the project management team assigned to the relevant project.

While equipment for the project are being manufactured or procured by the company the erection team is made to work at site for installation of machinery already supplied and planning for the machinery to be supplied as per schedules and progress. Appropriate changes are made to suit work progress at site. The site organization is later supplemented by commissioning engineers who eventually hand over the plant to the client after successful trial runs.

PROJECT ENGINEERING

Complete project engineering is provided through technical documents and other design generating softwares including Autocad, Pro-engineer and solid works. Engineering provided by the company not only includes plant and site layouts, key plans, equipment and sectional general arrangements, detailed equipment specifications and data sheets, steam and power balances, electrification and piping but also complete civil designs and drawings according to which civil works at site is undertaken.

Special care and emphasis is laid on an economically efficient design keeping in mind the prevailing work conditions and cost structures in the project region. In general, design of each plant is customized with a view to provide capacity optimization, high efficiency cane milling, energy efficient boiling and low steam consumption.

Today, ASHOKA stands at the cross roads of time with a magnificent past and a challenging future in store. A future that the company looks forward to with confidence and optimism.



ASHOKA MACHORD

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