Industrial Boilers Ltd. is one of the largest manufacturers of Boilers in India. Today IBL caters to a range of companies across various industries in India and globally owing to its rich history, efficiency and strength. IBL is one of the Largest exporter of Process Boilers from India. 30 to 40% of IBL Boilers are exported Worldwide.

IBL focuses on building great products, innovating rapidly to improve them and keep them both affordable and highly efficient.

IB Turbo has consistently delivered efficient and reliable steam turbines in India and has supplied over 4200 MW of net electricity generating equipment with more than 650 turbines running in over 25 countries.

IB Turbo has earned a strong reputation of being a trusted and respected name in mini power plants in India.

IB Turbo range includes Pressure Reducing, Single Stage, Multistage Back Pressure and Multistage Condensing Turbines.

Ever since it’s inception, IB Turbo has consistently delivered efficient and reliable steam turbines and is well known in the industry for its impeccable customer service and quality.

A rich history coupled with highly trained, loyal and skilled staff, constant innovation and superior quality products is what makes IB Turbo a leading company for Turbines in India.

IB Turbo Caters to a variety of industries including textile, sugar mills, rice mills, F&B, Oil & Gas, Pharmaceuticals, Here at IB Turbo, we value every customer relationship and we have long lasting relationships with our partners as well as our skilled employees.

We manufacture and supply industry specific custom made steam turbines that have been known for its reliability and service.

IB Turbo is the market leader in co-generation turbines with a strong market share in India across over 12 Industries and over 800 turbine installations globally.

The superior electronics and software in the company’s synchronised turbines, provides effortless operation under fluctuating steam conditions to generate maximum possible power.
Advantages of purchasing from IB Turbo

- One Point source for complete Cogeneration package.
- Proper System integration.
- One Point Guarantee and Responsibility.
- Steam Pipe Line design assistance.
- Electrification and Grid.
- Synchronisation assistance.
- One Point for Boiler and Turbine Service.

COMPANY INSIGHTS

Global Footprint

With Domestic operations beginning in 2001, IB Turbo expanded its footprint rapidly across India and today, has a strong presence across the country with hundreds of installations across prominent states in India.

In 2002, IB Turbo entered the global market. And created a strong and significant global footprint. IB Turbo continues to focus on expansion and growth globally.

Indian Footprint

With Domestic operations beginning in 2001, IB Turbo expanded its footprint rapidly across India and today, has a strong presence across the country with hundreds of installations across prominent states in India.
BT-4 is a Curtis design turbine that has a low CF rotor. The rotor is supported on both sides by high speed bearings. The BT Series has been specially designed for continuous operation as repeated startup and shutdown cycles. As a synchronised turbine, it can be fitted with induction generators or alternators and can meet varying steam loads effortlessly to deliver constant back pressure. Can be provided with Hydro-Mechanical or Electronic Governors. No requirement for Control Oil System. As a base load turbine, it meets the exacting performance of a work horse. A highly proven, rugged and reliable design, it can be adopted for all small Cogen applications. High level of standardisation has ensured that parts are available immediately, reducing turbine downtime. Suitable for quick start operation.

FEATURES
- Robust double bearing rotor with 3000 RPM design ensures highest operation reliability.
- Horizontally Split Steam casing ensures easy inspection of the internals without disturbing the steam lines.
- Suitable for operation with saturated steam
- Ring Lubricated bearings ensures no requirement for Pressurised oil system.
- Can handle large variations in process steam demand and Boiler pressure.
- Touchscreen Panel ensures ease of maintaining process pressure.
- Induction Generator ensures easy synchronising with Grid.
The 6SS is a large diameter Single Stage Curtis wheel design. The rotor shaft is supported by double bearings.

The BT Series has been specially designed for continuous operation as repeated startup and shutdown cycles.

As a synchronised turbine, it can be fitted with induction generators or alternators and can meet varying steam loads effortlessly to deliver constant back pressure.

Can be provided with Hydro-Mechanical or Electronic Governors.

No requirement for Control Oil System.

Suitable for Mechanical drive Operation.

High level of standardisation has ensured that parts are available immediately, reducing turbine downtime.

FEATURES

- Single Stage High Back Pressure Turbine that can be operated at 3000 / 5000 / 6000 RPM.
- Suitable upto 45 Bar of Inlet Pressure.
- Designed for High Back Pressure Applications upto 10 Bar.
- Hybrid Labyrinth and Carbon Ring type steam seals.
- Can be provided with Hydro-Mechanical or Electronic Governors.
- No requirement for Control Oil System.
- Available with ring lubrication and forced lubrication options.
- 2 nos Hand Valve for Optimized operation at Part Load conditions.
- Available with Options of Alternator Drive And Induction Generator Drive for seamless synchronizing and Back Pressure Control.
- Suitable for Mechanical drive Operation.
- Horizontally Split Steam casing ensures easy inspection of the internals without disturbing the steam line.
FEATURES

- Single Stage High Back Pressure Turbine that can be operated at 3000 / 5000 / 6000 RPM.
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- No requirement for Control Oil System.
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- 2 nos Hand Valve for Optimized operation at Part Load conditions.
- Available with Options of Alternator Drive And Induction Generator Drive for seamless synchronizing and Back Pressure Control.
- Suitable for Mechanical drive Operation.
- Horizontally Split Steam casing ensures easy inspection of the internals without disturbing the steam line.
- Double side Bearings of the turbine shaft, increasing the stability and giving long life to the operation. The bearings are white Metal type Journal Bearings.
**FEATURES**

- Single Stage High Back Pressure Turbine that can be operated up to 7500 RPM.
- The BT Series has been specially designed for continuous operation as repeated startup and shutdown cycles.
- Suitable up to 69 Bar of Inlet Pressure.
- Designed for High Back Pressure Applications up to 18 Bar.
- Labyrinth type steam seals.
- Can be provided with Hydro-Mechanical or Electronic Governors.
- 2 nos Hand Valve for Optimized operation at Part Load conditions.
- Available with Options of Alternator Drive and Induction Generator Drive for seamless synchronizing and Back Pressure Control.
- Suitable for Mechanical drive Operation.
- Suitable for Quick start Operation.

**FEATURES**

- Reliable and rugged condensing turbine designed for steam flows up to 25 TPH and 3.5 MW Shaft power.
- Rate speed of 7000 RPM Turbine ensures a balance between ease of operation and efficiency.
- Up to Nine Stage of blade rows for maximum efficiency.
- Provision for steam Extracon.
- Horizontally Split Steam casing ensures easy inspection of the internals without disturbing the steam lines.
- Rigid rotor construction ensures no requirement of Barring Gear.
- Can be provided with tilting pad white metal lined gearbox bearings.
- Can be provided with Hydro-Mechanical or Electronic Governors.
- No requirement for Control Oil System.
- Ideal for captive power plants, solar thermal systems and waste to energy plants.
- Suitable for Low Pressure, Low enthalpy steam sources.
FEATURES

- High efficiency reaction blades with up to 19 stages mean better efficiency, leading to lower specific steam and fuel consumption.
- Electronic Speed Control Actuation system with direct electronic output instead of hydraulic output from converter, results in superior speed and frequency control.
- Available with back pressure and condensing configurations.
- Controlled extraction of up to 12 Bar permits us to maintain process pressure and power as per requirement.
- Provision for extraction of steam at up to 3 different pressures.
- Tilting pad white metal lined bearings for complete high speed train.
- Sophisticated Vibration Monitoring System.
- A highly proven design, it can be adopted for all small Cogen applications.
- High level of standardization has ensured that parts are available immediately, reducing turbine downtime.

CONTROL PANEL

- SCADA ENABLED TURBINE CONTROL

- PLC BASED TOUCH SCREEN DISPLAY

- All IBT turbines come equipped with a touchscreen Infographic Panel, operated by inbuilt panel allowing live monitoring of all parameters at a single location.
- These systems allow easy communication with any Plant level operation using MODBUS Protocol.
- Provision for Online Monitoring of Live data on Mobile devices and PCs.
- Power generation and electrical synchronizing options with Systems operating at following voltages – 380 V / 415 V / 440 V / 690 V / 3300 V / 6600 V / 11000 V / 13800 V
- Synchronization can be done to operate at standalone mode, back pressure mode as well as fixed power mode.
### ECONOMICS OF CO GENERATION

As the word CO-GEN goes, it signifies two separate generations, co-existing at the same time. Steam is a basic need for the process industry. Generating it at higher pressure adds just 5 to 25% on the fuel cost, but Premium Energy (Power) is generated by the Turbine.

1 kg of Coal = 5000 kcal = Rs. 9.00
5000 kcal of Electricity = 5.81 units = Rs. 43.00

Cogen turbines are considered to be near isentropic processes, in which the entropy of the steam entering the turbine is almost equal to the entropy of the steam leaving the turbine.

Cogen turbines have efficiencies over 80% compared to conventional thermal plants operating at just 40%. This leads to inexpensive and environment friendly power generation, a fundamental requirement in today’s times.

**BENEFITS FLOWING OUT FROM AN EFFICIENT COGENERATION SYSTEM**
- Reduction in Fuel, thereby reducing Green House Gas emissions
- Use of Biomass and other Carbon Neutral Fuels to generate electricity
- Low Power generation cost
- Accelerated depreciation
- Reduced dependency on local grid supply
- In house source of reliable, uninterrupted and high quality power
- Government Incentives and subsidies

### PARAMETERS OF IBT TURBINE FRAMES

<table>
<thead>
<tr>
<th>Model</th>
<th>Type</th>
<th>Max. No. Of Stages</th>
<th>Rated Speed RPM</th>
<th>Gearbox</th>
<th>Forced Lubrication System</th>
<th>Inlet Pressure</th>
<th>Inlet Temperature</th>
<th>Max. Bleed/Extraction Pressure</th>
<th>Outlet Pressure Minimum</th>
<th>Power (kW)</th>
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</table>

### STANDARD FUELS
- Coal/Lignite
- Wood Chips
- Natural Gas

### SPECIAL FUELS
- Pulpcake
- Mustard Straw
- Rice Straw
- Biogas/Methane
- Municipal Waste
- Biofuel Pellets
At IB Turbo, our research is 5 - 10 years ahead of its time to provide our customers with the latest and best technology. Our research is just a stepping stone to provide the best technology to our customers.