PFT – Two stage axial fan
The high pressure fan for modern boiler plants
Modern boilers equipped with complete flue-gas cleaning systems demand fans for high pressure that can be controlled quickly and accurately. The above PFT fan is in operation at the Fyriskraft power plant in Uppsala, Sweden. The impellers have a diameter of 3.15 m. Power demand is 3.2 MW on the fan shaft.
PFT – the boiler fan for tough performance requirements

Fläkt Woods PFT axial fan combines compact size for minimum space requirements with high pressure, and high efficiency, throughout its entire operating range.

PFT is a two stage axial flow fan which develops double the pressure rise compared to that of a conventional single stage fan. The fan has two impellers mounted on a common shaft with a guide vane arrangement between the two impellers.

The fans operating point is quickly adjusted to the systems load demand by varying the pitch of the hydraulically adjustable impeller blades.

PFT fans are recognised for:
- Reliability
- Stable performance
- Ease of maintenance

The PFT axial is a high-pressure fan offering exceptional operating economy, a number of installation advantages, accurate and trouble-free control, plus low maintenance costs

Fläkt Woods PFT axial – the optimum choice for your next forced draft or induced draft fan.
PFT’s overall design features makes it a unique axial. Here’s why:

• The fans design ensures high aerodynamic performance throughout its entire operating range, as documented from installations around the world. The fan will be equipped with Fläkt Woods Stall Warning System for safe operation.

• You always choose the optimal fan for your installations due to the large range of PFT models with varying impeller diameters, hub sizes and speeds. The operating range covers duties up to 1000 m³/s and 30 kPa.

• The two shaft bearings are positioned with one impeller between the bearings and the other on the free shaft end for high rigidity.

• This arrangement provides substantial vibration and resonance advantages, combined with high accessibility.
fan with unique features

• No external actuator is needed for the PFT axial since the control mechanism, including its hydraulic cylinder, is integrally built into the fan hub. With this design, control forces are not transmitted externally.

• The blades are controlled by a minimum number of moving parts, giving high reliability, low friction and long operating life.

• The servo system controlling blade positioning eliminates all hysteresis problems.

• The unique blade thrust bearing arrangement gives a low bearing load together with guaranteed continuous pressure lubrication of the bearings - the basic requirements for low control forces and long bearing life.
Details that make PFT axials the most economical alternative

Quick and responsive control system

The control system quickly and accurately adjusts the PFT fan’s operating point to meet system requirements by adjusting the pitch of the blades. The blades are adjusted by means of a hydraulic cylinder built into the impeller hub. A minimum of moving parts are required to transfer the cylinder’s movement to the blades of both impellers.

The hydraulic cylinder is controlled by a double-acting servo valve responding to a signal from the control unit. The cylinder repositions the blade angle from the current position to the required position. This monitoring function provides fast and precise control without hysteresis.

Blade thrust bearings with long operating life

Placing of the blade thrust bearings at a maximum distance from the centre of the impeller enables larger bearings to be used resulting in lower bearing load. The blade thrust bearings are subject to loads from the blade and the bearing mounting only and not from a blade shaft.
The most economical alternative

Fläkt Woods unique lubricating system lubricates the blade thrust bearings. With the bearing housing tightly enclosed under a plate cover all lubrication grease remains in the bearing assembly and the lubrication system is not affected by any shaft sealing arrangement. This design prevents ingress of foreign matters, such as gas or particles, which can adversely effect bearing functions and life.

The fan that’s simple to service

Fläkt Woods PFT fan is easy to maintain. We design the axial fans to operate over long periods without the need for maintenance, to keep service requirements to a minimum. Inspection doors are strategically located on the fan for quick and easy maintenance and service.

Fan capacity range

PFT’s design principle gives you a fan of the longest possible operating life due to:

- a low load on bearings
- guaranteed continuous lubrication of blade thrust bearings under pressure
- no risk for fouling the lubricant
- no corrosion risk
Fläkt Woods is a global leader in air management. We specialise in the design and manufacture of a wide range of air climate and air movement solutions. And our collective experience is unrivalled.

Our constant aim is to provide systems that precisely deliver required function and performance, as well as maximise energy efficiency.

Solutions for all your air climate and air movement needs
Fläkt Woods is providing solutions for ventilation and air climate for buildings as well as fan solutions for Industry and Infrastructure.

- **Air Handling Units (AHUs)**
  Modular, compact and small AHU units. Designed to ensure optimisation of indoor air quality, operational performance and service life.

- **Air Terminal Devices and Ducts**
  Supply and exhaust diffusers and valves for installation on walls, ceiling or floor are all included in our large range and fit all types of applications.

- **Chilled Beams**
  Active induction beams for ventilation, cooling and heating, and passive convection beams for cooling. For suspended or flush-mounted ceiling installation – and multi-service configuration. With unique Comfort Control and Flow Pattern Control features.

- **Residential ventilation**
  A complete range of products for residential ventilation. Consists of ventilation units, exhaust air fans and cooker hoods designed to optimise indoor comfort and save energy.

- **Energy recovery**
  Dessicant-based product and systems that recover energy, increase ventilation and control humidity.

- **Fans**
  Advanced axial, centrifugal and boxed fans for general and specialist applications. Comprehensive range including high temperature and ATEX compliant options. Engineered for energy efficiency and minimised life cycle cost.

- **Chillers**
  Air-cooled and water-cooled chillers with cooling capacity up to 1800kW. Designed to minimise annual energy consumption in all types of buildings.

- **Controls and drives**
  Variable speed drives and control systems, all tested to ensure total compatibility with our products. Specialist team can advise on energy saving and overall system integration.

- **Acoustical Products**
  A complete line of sound attenuating products, including rectangular and round silencers, Media Free silencers, custom silencers and acoustic enclosure panels.