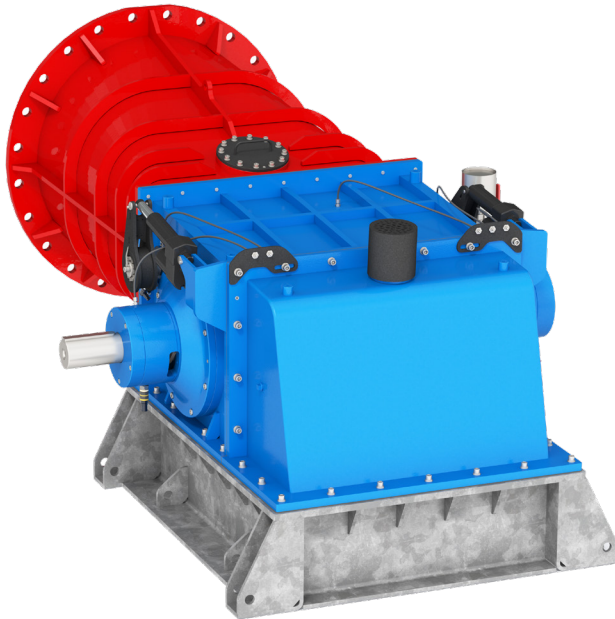
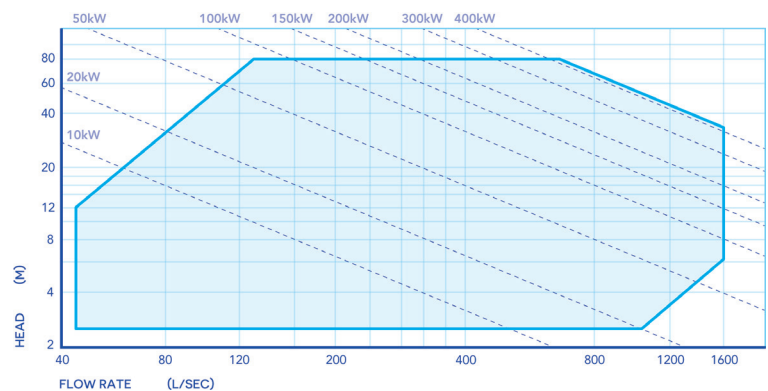




# Cross-Flow Turbines



Head	2,5 to 80 m
Flow rate	50 to 1600 l/s
Mechanical power	5 to 400 kW
Rotation speed	100 to 1200 rpm
Water inlet	Horizontal or vertical



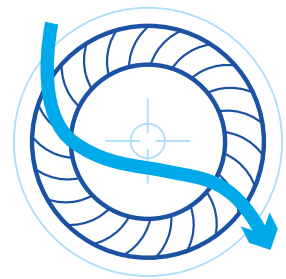
## ADVANTAGES :

- ▼ Robust and reliable mechanical design
- ▼ Simplicity and low maintenance cost
- ▼ Efficient management of low and variable flow rates
- ▼ Guaranteed minimum efficiency over a wide range of flow rates
- ▼ Compact turbine, limited civil engineering work
- ▼ Insensitive to leaves, plastics, algae, etc.
- ▼ Simple and quick installation from heads of 2.5 m
- ▼ Low runaway speed

The concept of the Banki / Cross-flow turbine was invented in 1903 by Australian engineer Michell. **It is a machine characterized by its relative simplicity and great robustness.** Its uniqueness lies in the double effect exerted by the water flow on the runner.

Water is directed via a penstock to the radial injection into the cylindrical runner with a horizontal axis. It is then discharged either at atmospheric pressure or through a partially submerged draft tube, creating a slight vacuum in the turbine, which results in increased power output.

The runner consists of around thirty curved blades, fixed and parallel to the axis of rotation. The water passes through the peripheral blades twice, driving them by a successive centripetal and centrifugal radial flow. This feature also makes the runner completely **insensitive to leaves, twigs, algae, plastic packaging, etc.**, which are ejected after half a turn due to the combined effect of water flow and centrifugal force.



**Our Passion,  
Your Energy**

Experts in hydro power and renewable energies.

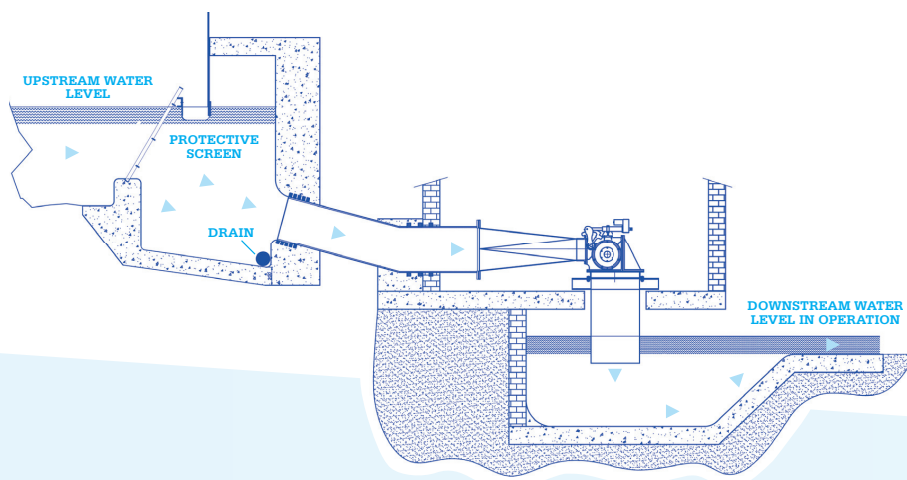
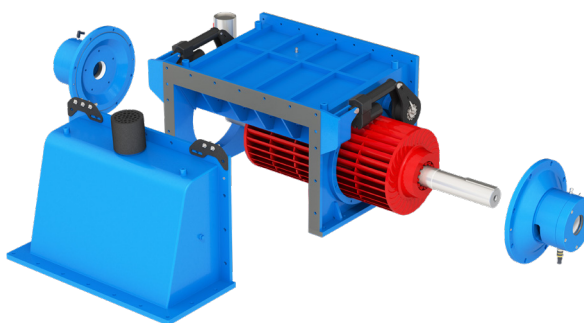
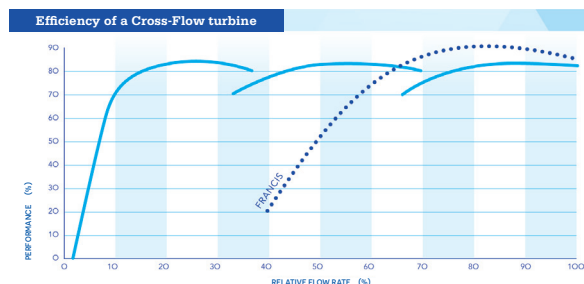
A Cross-flow turbine admission can have one or two compartments. The compartmentalization of **the inlet valve system ensures the turbine's efficiency when used under low flows**. JLA Cross-flow turbines are designed to operate over a wide range of flow rates while guaranteeing a minimum efficiency of 75% to 80%.

Depending on the site's layout, turbine water inlet can be either vertical or horizontal. JLA Cross-flow turbines are designed to be installed above the tailrace channel, at the lowest level, but out of reach of floods.

*In addition to its low runaway speed, one of the major advantages of this turbine is the relative simplicity of its construction, as there are only two or three moving parts:*

- ▼ The runner
- ▼ The flow control elements (valves), of which there may be 1 or 2.

All turbine components are easily accessible, making disassembly of each part (runner, bearings, etc.) straightforward. Maintenance is limited to periodic lubrication of the bearings. The runner's condition can be easily checked by removing the front cover.



### EACH SITE, EACH RIVER IS UNIQUE.

That's why we design tailor-made turbo-generator units, perfectly suited to the specificities of each project.

All design and manufacturing stages of our turbines are carried out exclusively in Belgium, in our workshops. We ensure rigorous quality control throughout the machining and assembly process.

Our turbines can of course be used to generate electricity but also for various other applications by coupling them to a mechanical receiver such as a pump, a mill, or a sawmill.

Designed to last, JLA Hydro turbines are built to operate continuously for several decades while requiring minimal maintenance.

*Many customers have been attracted and impressed by the ease of installation and maintenance of these high-performance turbines.*

JLA Hydro provides complete turbo-generator units to equip power plants undergoing renovation or greenfield sites. The skills of its engineers are put to use to find the best technical solutions based on the site's characteristics and the customer's needs and expectations.

### CONTACT US NOW TO DISCUSS YOUR PROJECT!

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