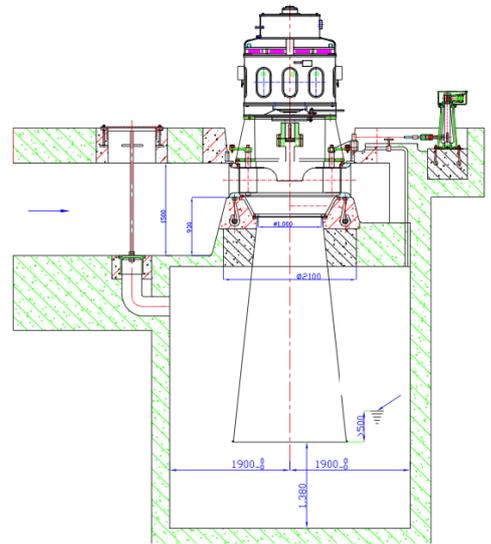
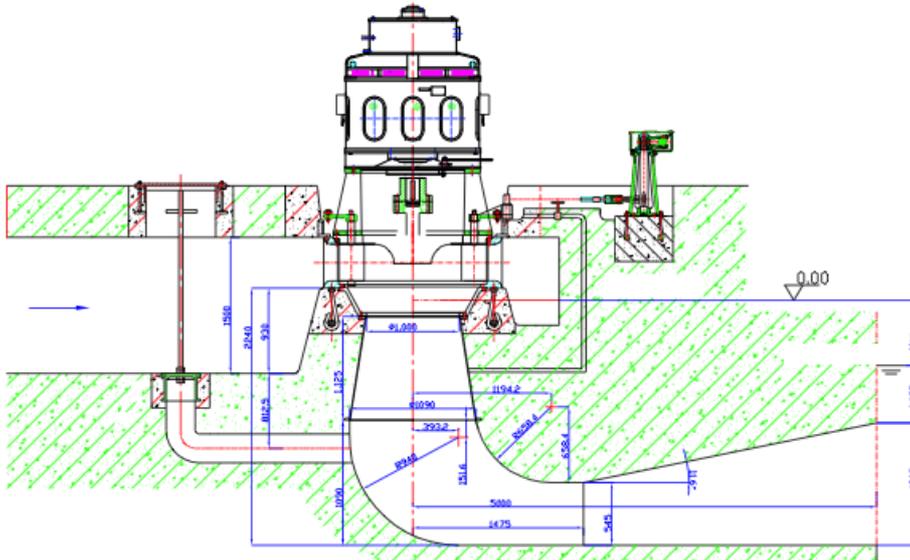




Sunnytek Solar Sweden
50 KW Kaplan Turbines 2-4 meters water head

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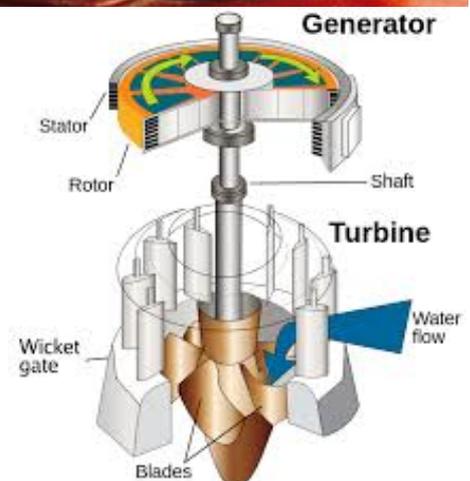


Sunnytek is happy to offer Kaplan turbines for low water heads and substantial output power. Range is 20-100KW and here we show details of the 50 KW system. There are many rivers with a lot of water but not so good sites for many meters water head or large dams. Here we have a reasonable prices system for these sites. Normally we have several turbines side by side for compensation of changes in water flow and a high redundancy.

Kaplan low head water turbines

- * Water head from low 1.5 meter and up to 5 meter so we open up new sites not possible with other solutions.
- * Relatively simple dam and infrastructure and reasonable on site costs and service costs
- * Output AC on grid or making an island own grid at 50/60Hz.
- * Simple design that can be handled by less experienced service staff.
- * Very reasonable costs and short pay off time.
- * Adjustable turbine for large variations in water flow and to keep efficiency dynamically over a large variation range.
- * Can cooperate as a hybrid system with a solar farm, wind mill and energy storage as a hybrid high redundancy solution

Kaplan turbines are similar to a boat propeller and a very straight design working for many years. The wicket gates can be adjusted to compensate for flow variations in a simple way. These turbines have no adjustable propeller blades of the Kaplan propeller unit. Output can be any voltage needed in area. We have special electronics and a control system to get automatic sync to external grids. One solution can make an own grid and then generator is having an internal sync and stabilisation to 50 or 60Hz.



Sunnytek Sweden Glimmervägen 8 187 34 Täby, Sweden
 Tealand engineering Kericho Kenya Mobile +254 727 36 55 66
 Web sites www.sunnytek.se www.sunnytek.nu

E-Mail sales@sunnytek.se
 E-mail psh@tealand.co.ke
 All Registered companies



System with 50KW output at 2 meter water head.

| | |
|--|--|
| Technical report | H=2 m, Q=2.5~3.5m ³ /s, N=50KW |
| Kaplan Turbine, Vertical haft design with no gear box. | Runner diameter---100cm |
| | Rated speed---300rpm |
| | Efficiency of rated point---72.5% |
| | Runaway speed---600rpm |
| | Turbine rated output about 60 KW |
| | Height --- 1.4 m, Width --- 2 m |
| | Weight --- 10,700 kg |
| Generator: | Rated capacity---50KW with the provision of 10% overload |
| | 400V/50HZ, Rated power factor---0.8, |
| | Rated speed---300rpm |
| | Rated efficiency---91% |
| | Runaway speed---600rpm |
| | Practical output 50kw |
| | Height --- 1.4 m, Width --- 2 m |
| Excitation method | Brushless inductive excitation |
| Speed Regulator and controller | STSD-350 auto system regulator |
| Control system | SBKF-10-/1000 controller |

