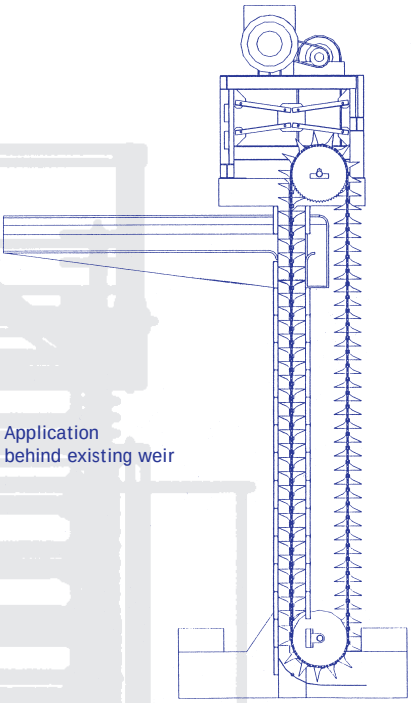
MAX-tec
Wasserkraft AG

KataMax
Small Hydro Power Station

extremely ecologic and economic ...

Prevalent Small Hydropower Stations

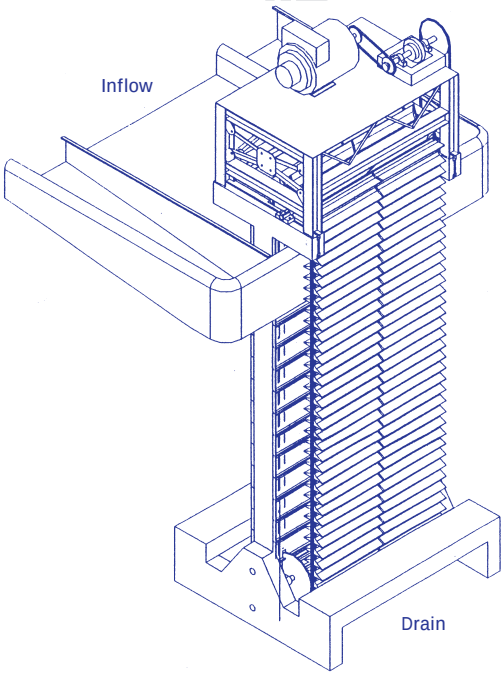
Small Hydropower Stations are known to require high investments per installed unit. 97% of the energy produced by hydropower are therefore generated in big hydroelectric power plants with a capacity of over 10 megawatts. Only these big hydroelectric power plants can be run without subsidies, while the small hydropower stations rely on public funds. Yet small hydropower stations are advantageous in respect of ecological terms. They can run almost non-stop, hours of operation adding up to about 6.000 per year. Their extremely high degree of efficiency lies between 65 and 88%. The cost of operation is low and the resource water mostly has no costs at all.

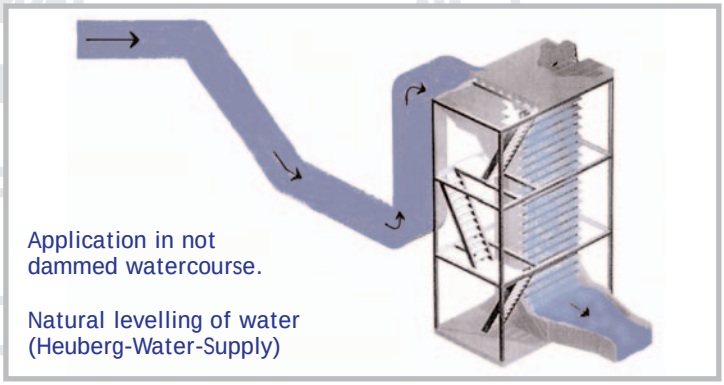


Application
behind existing weir

KataMax - the renaissance of Small Hydropower

So far, the advantages of small hydropower have never been used to full capacity due to high installation costs. The KataMax Hydropower Station puts an end to this drawback.
The innovation KataMax combines the advantages of ecological operation of the prevalent small hydropower stations and economic advantages, which allow KataMax to run efficiently without subsidies.





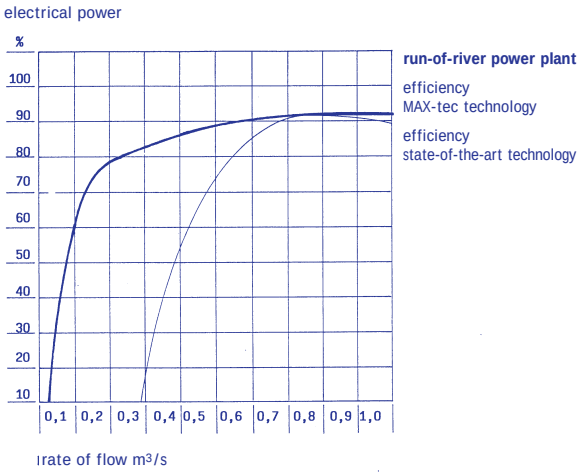
Application in not dammed watercourse.

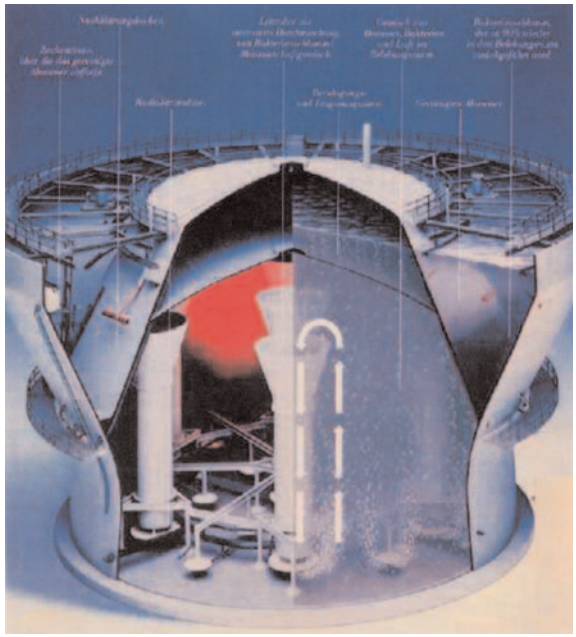
Natural levelling of water (Heuberg-Water-Supply)

KataMax-Hydropower Technology

KataMax Hydropower Technology is a combination of proved and tested conveyor technique and a highly efficient transformation technology.
KataMax functions comparably to a paternoster lift, using the natural difference of level in watercourses. The floats, which are mounted to a chain, run through a vertical shaft. The floats are lead through the shaft by two axes (head axis and bottom axis). The weight of the water activates the float movement. The chain then carries forward this physical energy to the highly efficient transformation technology. The amount of released energy results from the height of fall and the supply of water.
The innovative gearing and generating unit of KataMax finally converts the originated mechanical energy into electricity.

In this way, KataMax combines economic and ecologic requisitions, providing the KataMax-operators with highly efficient energy.





In a conventional reactor, the water arrives unused in the discharge system. In combination with the KataMax-technology, this water could be used to regain energy ecologically without CO_2-emissions.

The comparative Advantages of KataMax

- Short payback period
- Mobile application
- KataMax is not a building, only minor structural measures necessary
- All KataMax constituent parts are recyclable
- Heights of fall between 2 and 20 m are utilizable
- No specialized Know-How is necessary for construction, building and maintenance
- Energy is generated from approx. 5% input (conventional hydropower around 30%) of maximum capability, acceding linearly with the amount of available water
- Modular concept of KataMax allows for flexible, individual adjustment of the station to the given height of fall differences and rate of flow, resulting in the highest efficiency possible for the location

This flexible and effective KataMax technology is topped off by its unique ecologic aquifer system. The purpose-built „Zero-Energy-Filter"-system serves as a fine rake. This way microorganisms cannot access the inside of the equipment and no harm is caused to them.

Case study
KataMax application in sewage treatment plant

working hours p. A.	average output	kWh/a
8.000	52 kW	416.000

Given a compensation of 9,67 Euroct/kWh as estimated in the EEG (German Energy Feeding Input Law), after subtracting costs of maintenance and operations, a revenue of approx. 33.000 Euro can be generated by using KataMax.

Overview of the Advantages:

KataMax ...

... stands for worldwide competitive and ecologic electricity production costs

The KataMax Hydropower Stations are delivered to our customers as a ready to use complete system. The KataMax principle allows for a significantly lower price level than the price level achievable with conventional hydropower plants. In some cases the maintenance and operation of KataMax Hydropower Stations can be outsourced to a competent partner company, which further decreases the electricity production costs.

... is predestined for mobile use

The KataMax-System consists of modular elements. The transport is extremely easy. The installation of a KataMax Hydropower Station next to a water source demands only a bottom plate to fix the station onto the ground. The mobility of KataMax enables the temporary use of water rights which had been impossible with conventional systems. The KataMax Hydropower Station can be used until expiration of the right of use, dissipated and rebuilt again.

... is recyclable

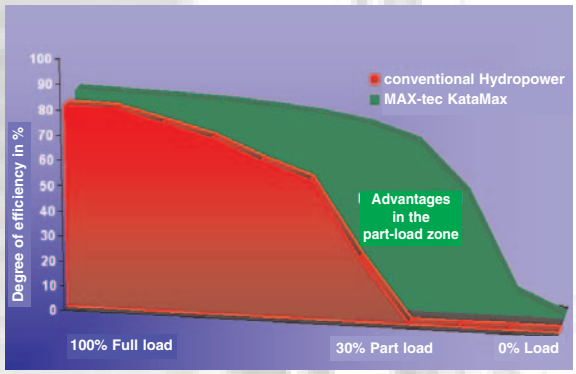
The elements of which the KataMax Hydropower Station consists are all recyclable.

... is assembled easily and therfore of extremely low-maintenance

No specialized Know-How is necessary for construction, building and maintenance. This simple construction makes the use of KataMax Hydropower Stations feasible in all newly industrializing countries.

... stands for extremely high cost effectiveness

Cost effectiveness is achieved by KataMax very good part load characteristics, achieved by its innovative actuation technology.



This technology generates energy from approx. 5% input, while a conventional hydropower station starts generating energy from arround 30% or more of the maximum capability. The excellent part load characteristics of KataMax are indeed exceptional. Usual hydropower stations have their major disadvantages in this very characteristics. KataMax Hydropower Stations are able to adjust to the varying amounts of water as they are occur in nature. The ability to generate energy in the part-load operational zone enables KataMax operators a significantly higher energy yield.

Contact and responsible for this brochure:

MAX-tec Wasserkraft AG

Contact: Mr. D. Lülsdorf
Sales Dept.

Industriestraße 169
D-50999 Köln (Industriegebiet Rodenkirchen)
Telefon +49(0)2236-39801-0
Telefax +49(0)2236-66492
E-Mail info@max-tec.de
Homepage www.max-tec.de