



***MA* industrie**
Mécanique Automatismes

HYDROELECTRIC POWER PLANTS



Bringing our expertise to hydroelectric power

MANUFACTURE OF TRASH RACK CLEANING MACHINES



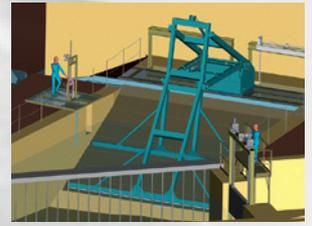
Preliminary design:

M.A.INDUSTRIE studies the dimensional, environmental and technical constraints on your site to design and cost the trash rack cleaning

solution best suited to your needs. We can devise costings for your project from your plans or our own site survey.

Study:

M.A.INDUSTRIE itself designs all the mechanical and automation systems for its own trash rack cleaners. With our volume modelling software we can easily simulate the kinematics and calculate the forces involved; you can then forward the findings to your civil engineering contractors. Our automation engineers have a wealth of experience in the industry and can program most industrial PLCs.



Manufacture:

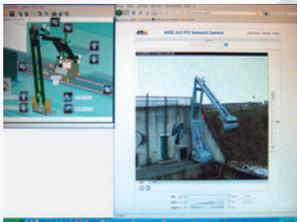
With 2000 m² of workshops available, M.A.INDUSTRIE can handle all phases of production. Dedicated machine welding, painting,

machining, wiring and assembly workshops. Testing and adjustment is carried out as far as possible in our workshop, with final adjustments made on site. M.A.INDUSTRIE also has 1000 m² storage space available.

Installation on site:

M.A.INDUSTRIE's installation teams are available throughout France to remove your old equipment and install your new trash rack cleaning machine. Our site managers all share our guiding values of quality, safety and on-time delivery.

Our installation technicians undergo regular training to ensure their qualifications are kept up to date.



Remote management:

M.A.INDUSTRIE's trash rack cleaners are fully automatic, but we also offer a remote management option which, when linked to video

monitoring, allows you to operate the trash rack cleaner manually from any computer with an Internet connection. This option is also available on tablets and smartphones.

Maintenance:

All M.A.INDUSTRIE equipment is shipped with a detailed instruction and maintenance manual. Our installation engineers can be deployed rapidly on site to assist with any servicing or maintenance requirements for any type of trash rack cleaner.



Fixed trash rack cleaner with channel discharge (fish friendly)

Travelling trash rack cleaner with ditch discharge



Travelling trash rack cleaner with channel discharge

Travelling trash rack cleaner with skip discharge



▶ HYDROELECTRIC POWER PLANT RENOVATION



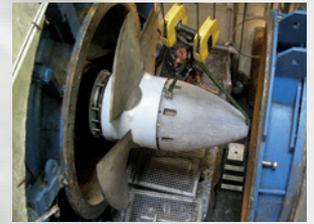
Preliminary design:

Power plant shut down for a number of years, renovation to obtain the H07 contract or repairs following an incident; M.A.INDUSTRIE

can cost your restoration project based on its 20 years' experience in hydroelectric power generation. We service power plants up to 5 MW.

Installation on site:

M.A.INDUSTRIE's installation teams can travel all over France to dismantle and refit your hydraulic turbine. We work on all kinds of turbine: Kaplan, Francis, Pelton, Banki,...



Analysis:

M.A.INDUSTRIE's engineers will assess the equipment removed so as to achieve the best possible cost/return ratio.

A fully justified and costed report is provided at the end of the removal process before the renovation work begins.

We design and provide drawings for parts requiring repair and provide a complete job file at the end of the work.

Repairs:

M.A.INDUSTRIE will oversee any specific repair work to your hydraulic turbine: bearing adjustment, impeller fabrication, shaft repairs, along with a full range of common service options: impeller reconditioning, flange reinforcement, seal and guide reconstruction, machining of small and medium sized parts.



Testing and adjustment:

Preadjustment of the machinery is carried out by M.A.INDUSTRIE's installers when re-fitting the turbine. A document describing test

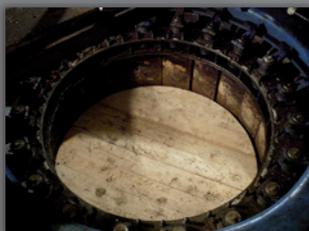
procedures is prepared and discussed with the operator before the water supply is restored to your plant, to ensure the safety of people and equipment. The test manager will check any final adjustments before the plant is brought back into service.

Maintenance:

M.A.INDUSTRIE's installation teams are also available for all your preventive and corrective maintenance needs.



Before



Francis 410 kW

After



Kaplan 2000 kW

Before



Pelton 1800 kW

After

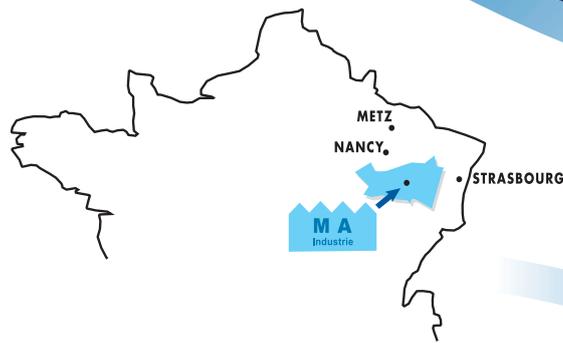


Francis 240 kW



FOR FURTHER INFORMATION
OR TO OBTAIN A QUOTE:

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