PELTON TURBINE

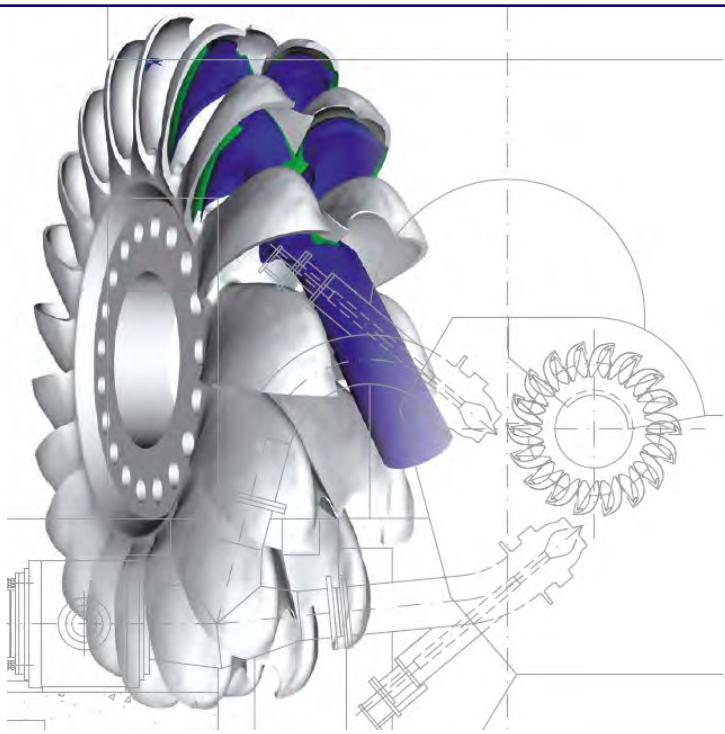
An impulsive machine

PELTON**TURBINES**

Throughout the years, Litostroj Power has supplied or upgraded more than 80 Pelton turbines, with an output of 2,8 GW in total.

Main features:

- Heads from 50 m up to 1500 m
- Wide range of discharges
- Outputs up to 400 MW
- Runner diameters up to 4 ml



DESIGN PRINCIPLE AND RANGE OF USE

Pelton turbines with either vertical or horizontal shaft are intended for use of water energy at very high head (up to 1500 m) and relatively low discharge.

Pelton turbine is an impulse machine that transforms the potential energy of water into kinetic energy in a form of a water jet, which impacts and drives a Pelton runner

WATER-TO-WIRE SOLUTIONS | **NEW INSTALLATIONS** | **REHABILITATIONS AND OVERHAULS** | **UPGRADES** | **HYDRAULIC MODEL TESTING**

THROUGHOUT THE YEARS, LITOSTROJ POWER HAS SUPPLIED OR UPGRADED MORE THAN 80 PELTON TURBINES, WITH AN OUTPUT OF 2,8 GW IN TOTAL.

Types of Pelton turbines:

- Horizontal Pelton units
- Vertical Pelton units

Litostroj Power manufactures both horizontal and vertical Pelton turbines. All setups include a main inlet valve, a bifurcation directing the water to the jet nozzles, which throw a jet on a Pelton runner bucket, where the kinetic energy of the jet is transformed into the torque driving the runner.

Each Pelton turbine is equipped with deflectors intended for cutting off the water jet from the nozzle so as to redirect it to tail water without hitting the runner. In such way, Pelton turbines are suitable for units with a long penstock without the need of a surge tank or another penstock safety element.

Horizontal Pelton turbine can be designed with either one runner or two runners mounted on the same shaft, with water supplied to each runner by one up to three nozzles.

Vertical Pelton turbine can be equipped with four to six jet nozzles and can successfully substitute a specifically slower Francis turbine. Even in case of a very large penstock, the control system of such Pelton turbine ensures stable operation of the unit.

Most Pelton runners are machined out of a single forged disk, which yields a supreme-quality product. The Pelton runner for larger units where such technology cannot be applied are either bolted or welded.

Another major advantage of the Pelton turbine is individual control of each nozzle, which enables turbine operation at a wide range of discharge.

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