

THE TESTING FACILITY

Two modern test rigs
100 engineers and researchers

Litostroj Power Hydraulic Laboratory is located in the Blansko valley, the region where Prof. Kaplan has tested his first runner. Due to a century long heritage, experiences and references in hydraulic design in the region, our Hydraulic Design Center is continuing work within ČKD Blansko Engineering, a proud member of the Litostroj Power Group. Built in 2011 the Hydraulic Laboratory represents one of the top testing utilities in the world.

OUR EXPERTS FOCUS ON:

MEASUREMENT OF ENERGY

Evaluation of head, flow, moment and speed to establish energetic characteristics and optimise efficiency.

MEASUREMENT OF DYNAMIC BEHAVIOUR

Evaluation of pressure pulsation to establish and optimise frequency and amplitude characteristics.

MEASUREMENT OF EFFORTS

Evaluation of moments acting on blades and axial forces to optimise output and ensure proper dimensioning of the unit.

MEASUREMENT OF CAVITATION BEHAVIOUR

Measurement of energy characteristics for different values of Thom coefficient and verification of the influence of the tailwater level to minimise cavitation over operation time.

HYDRAULIC LABORATORY

PHYSICAL MODEL TEST IS A BASIS OF RESEARCH AND DEVELOPMENT OF LARGE AND MEDIUM-SIZED HYDRAULIC MACHINES.

Our production facility in Europe has manufactured over 1000 units. Our powerful research and development team has been developing solution for over 33GW of new installation.

Equipment of Hydraulic laboratory allows to test the hydraulic machines in vertical or horizontal assembly:

- Kaplan turbines
- Bulb turbines
- Francis turbines
- Pump turbines incl. Deriaz turbines
- Pelton turbines
- Pumps



HYDRAULIC LABORATORY SUPPORTS DEVELOPMENT OF HYDRAULIC MACHINES, CONDUCT TESTS ON THE MODELS OF HYDRAULIC TURBINES AND PUMPS IN ACCORDANCE WITH THE IEC 60193, AS WELL AS PROVIDE FLOWMETER CALIBRATION.

TEST RIG NO.1

1. HIGH-PRESSURE VESSEL
2. LOW-PRESSURE VESSEL
3. DYNAMOMETER + TESTED MODEL

COMMON EQUIPMENT FOR TEST RIGS NO.1 AND NO.2

4. CALIBRATION TANK
5. DIVERTOR
7. CIRCULATION PUMP
8. FUEL PUMP
9. SUPPLY PUMP
10. COMPRESSOR
11. EXHAUSTER
13. STORAGE TANK
14. SUCTION SUMP
17. LEAKED WATER PUMPING

TEST RIG NO.2

20. LOW-PRESSURE VESSEL
21. DYNAMOMETER + TESTED MODEL
23. CIRCULATION PUMPS
24. MOTOR OF CIRCULATION PUMP
25. CIRCULATION PUMP
26. COMPRESSOR
27. EXHAUSTER
28. FILTRATION AND WATER COOLING

Parameters of the universal testing rigs:

	1 st rig	2 nd rig
■ Maximum Head / H	120 m	120 m
■ Maximum Discharge / Q	1,2 m ³ s ⁻¹	0,9 m ³ s ⁻¹
■ Max. output of the model / Pmax	300 kW	300 kW
■ Max. rotation speed of the model / nmax	2000 rpm	2000 rpm
■ Useful capacity of the calibration tank	50 m ³	50 m ³

