



WTW

Water Turbines Works

...we believe in the Power of Nature



WATERPOWER 2016

About us



...we believe in the Power of Nature...

We provide support in developing the concept of construction of small hydropower plants (SHP) with the use of turbine units of our production. We specialize in flexible design – we select an appropriate technical solution for each location. Our customers can choose from many technical solutions. Offer of WTW includes complex equipment for hydropower plants.

We design and manufacture turbine units not only for newly constructed buildings, but also for existing small hydropower plants requiring modernization. We co-operate with Investors at every stage, starting from development of a project of hydroelectric facility construction, preparation of technical and construction documentation, and obtaining necessary work permits.

Apart from mechanical equipment, we also provide electrical equipment. We make monitoring systems for hydropower plants with remote operation and supervision via the internet and SMS.

We provide warranty and post-warranty service.

MISSION TRADITION

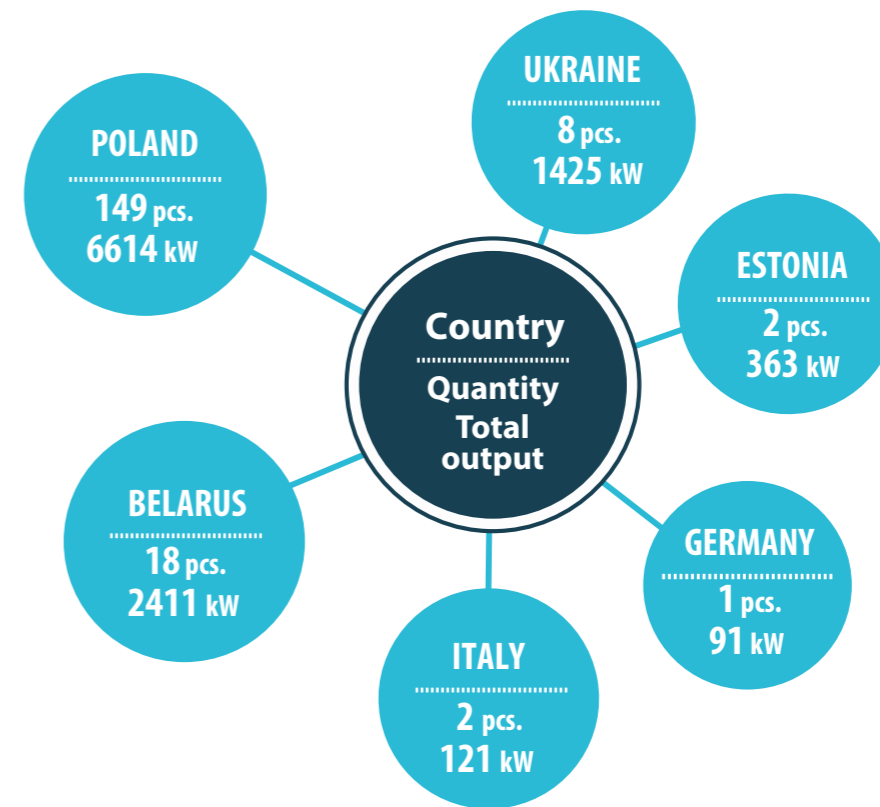
Mission

Renewable energy is a very important factor affecting the development of the world economy. Our goal is to manufacture turbines that will enable not only the production of environmentally clean electricity but will also meet the expectations of our customers for build quality and ensure fast and reliable return on the capital invested in the construction of the power plant.

Tradition

WTW Poland Ltd. is the leading Polish manufacturer of turbines, as well as mechanical and electrical equipment for small hydropower plants. The roots of the company date back to 1986. We have manufactured 180 turbines not only for Polish customers but also for clients from Belarus, Ukraine, Italy, Germany and Estonia. We help our customers from the very beginning of the investment process – developing concepts and designs for power plant construction; we select the right equipment and facilities. Our devices operate both in new buildings and in such places as revitalised old mills.

Our statistics



Summary: 6 countries, 180 delivered turbines, total output 11025 kW

TECHNOLOGY

The designs of the turbines we manufacture are drawn using Inventor Professional 3D modelling software from Autodesk. The automation and electrical parts are created in the SEE Electrical environment from IGE-XAO Company. Our turbines and power plant equipment use materials and parts from such globally renowned manufacturers such as: FAG (bearings), Balluff (potentiometers), Siemens (automation and control system), Anga (mechanical seal), Deublin (hydraulic rotating units). All this makes the turbines manufactured by WTW operate reliably for many years. We have production hall available with an area of 2000 m².

We also have many machines and devices, such as:

- CNC plasma cutter with a work table of 2000 mm x 6000 mm
- turning mills, table diameter of 1100 mm and 2000 mm
- 3-rolls plate rolling machine with work length of 2000 mm
- conventional lathes, rolling length up to 4000 mm, 5 pcs.
- conventional milling machines, 2 pcs.
- bridge crane with a capacity of 12.5 tons



WTW employs over 20 qualified employees.

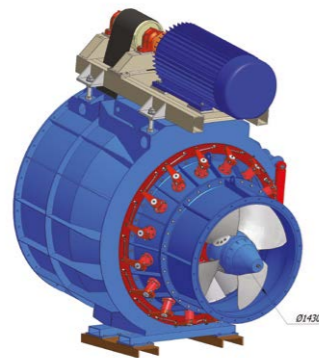
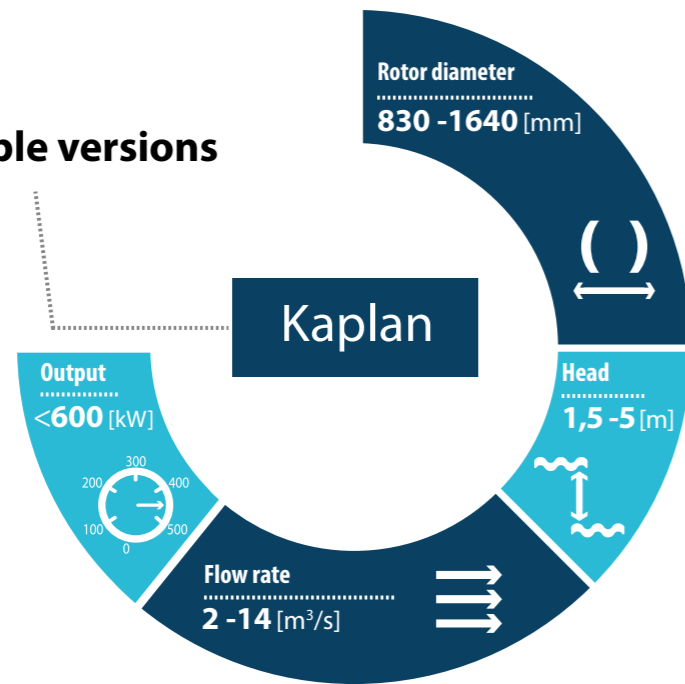


HORIZONTAL TURBINE

It is recommended for use in newly constructed power plants. Turbine is suitable for low head objects (for head from 1.5 m). Horizontal turbine is characterized by its high specific speed therefore it has great flow rates through the turbine compared to the rotor diameter. It is equipped with a flat belt gear (Habasit) with a generator placed on a body. Oil-free system for turbine bearing lubrication by automatic lubrication stations

with grease (SKF). Turbine has regulation of rotor blades and guide vanes by hydraulic control system. It is equipped with temperature sensors for bearings, vibration sensors for bearings, rotation sensors and potentiometers for measuring the opening angle of the rotor blades and guide vanes

Available versions



Horizontal turbine

We delivered a horizontal Kaplan turbine with rotor diameter $d=1430$ to Staraya Chortoriya hydroelectric power plant (Ukraine)



Delivery and installation of a turbine at Staraya Chortoriya hydroelectric power plant (Ukraine).

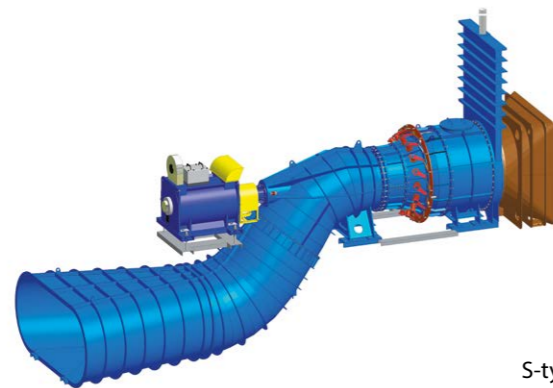
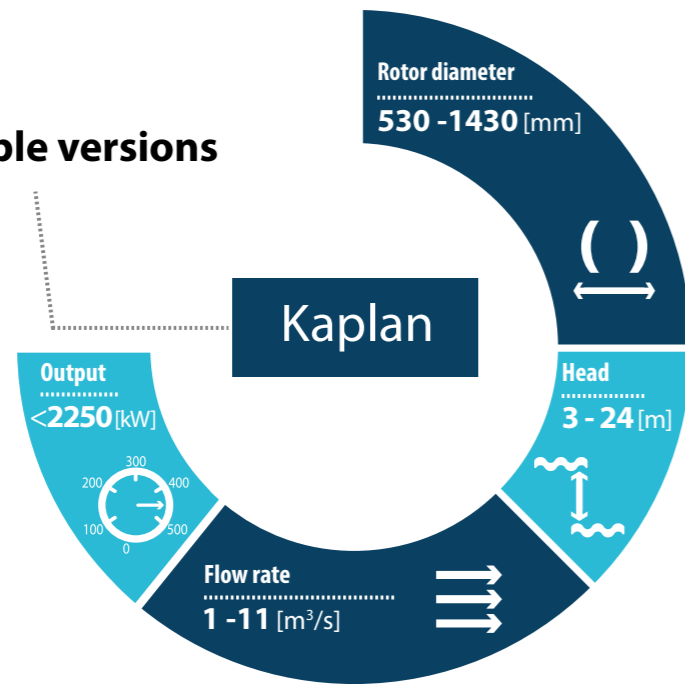


S-TYPE TUBULAR TURBINE

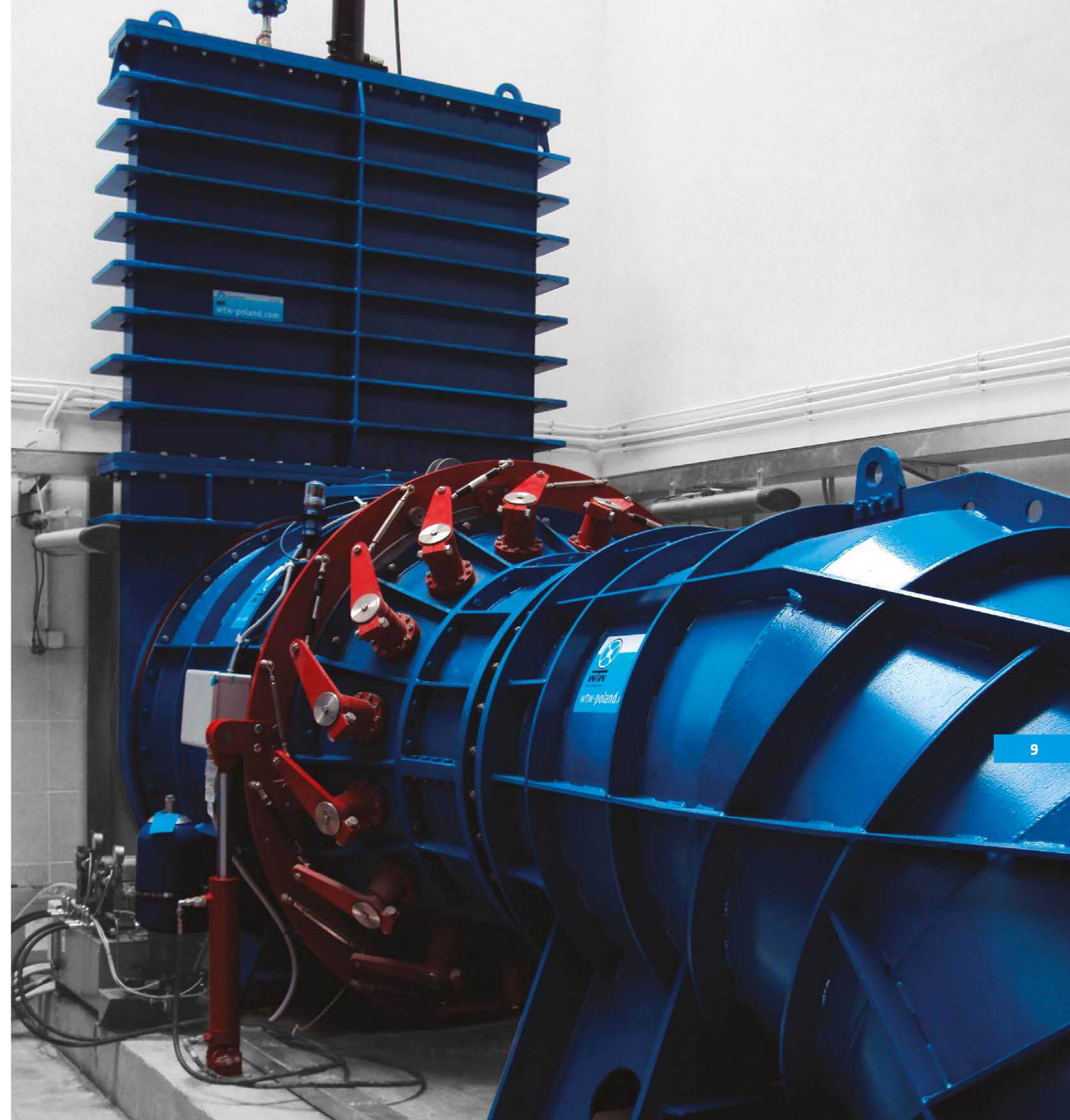
S-type tubular turbine is recommended for use in newly constructed power plants where head is higher than 3 meters. Turbine is usually powered by a pipeline. Turbine shaft is horizontally mounted and after a turbine bend it is connected by a coupling with generation shaft – in most cases we use direct connection therefore gear is avoided. Bearing supporting rotor, inside a turbine, is lubricated by automatic lubrication stations with grease (SKF).

Bearing on the turbine bend is lubricated with oil or bearing set is mounted directly in a generator. Turbine has regulation of rotor blades and guide vanes by hydraulic control system. It is equipped with temperature sensors for bearings, vibration sensors for bearings, rotation sensors and potentiometers for measuring the opening angle of the rotor blades and guide vanes.

Available versions



S-type tubular turbine



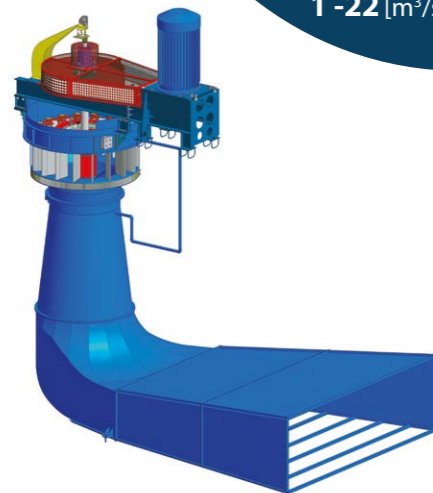
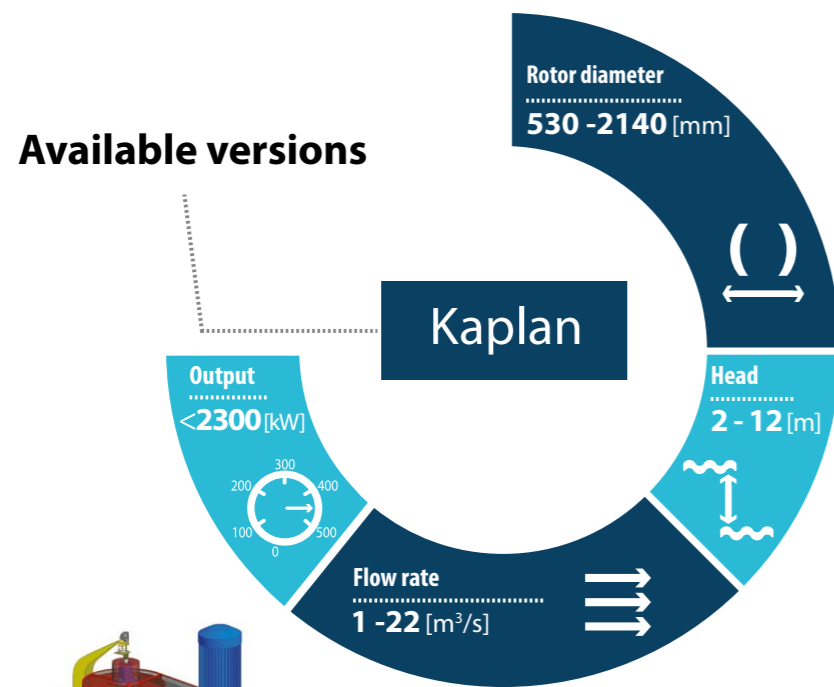
Delivery and installation of a turbines power 2 x 412 kW at Szabany hydroelectric power plant (Belarus).



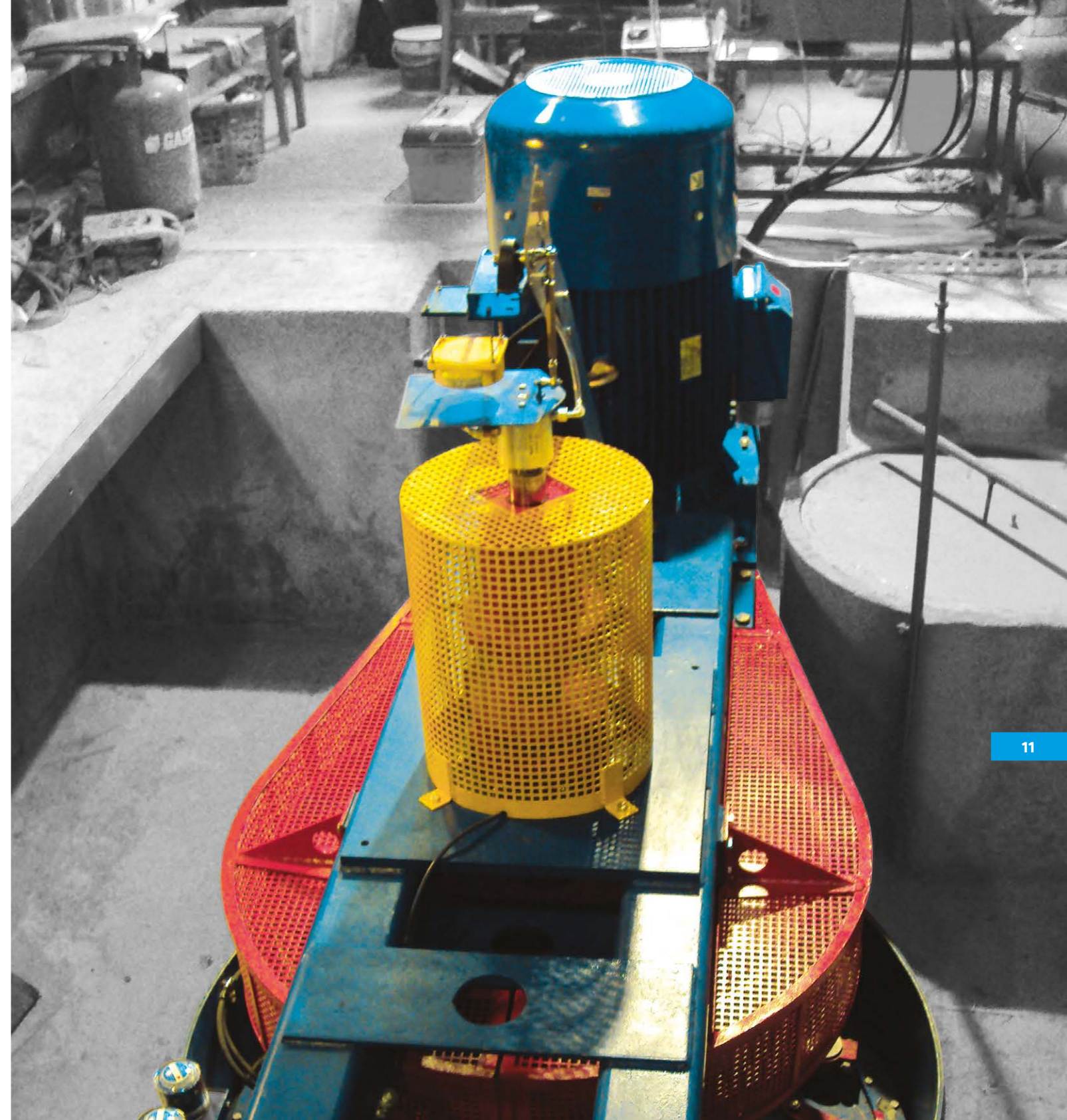
VERTICAL TURBINE

Vertical turbine with bend suction pipe is recommended for use in newly constructed power plants and facilities requiring revitalisation where it is often installed in place of Francis turbine. Turbine is mounted in pressure chambers. It has external regulation mechanism for guide vanes placed on the turbine cover, which provides easy access. Power is transmitted from a turbine to a generator by flat belt gear, mechanical gear or directly.

All turbine bearings are lubricated by automatic lubrication stations with grease (SKF). It is equipped with temperature sensors for bearings, vibration sensors for bearings, rotation sensors and potentiometers for measuring the opening angle of the rotor blades and guide vanes.



Vertical turbine



Delivery and installation of a turbine at Gubyn hydroelectric power plant (Ukraine)

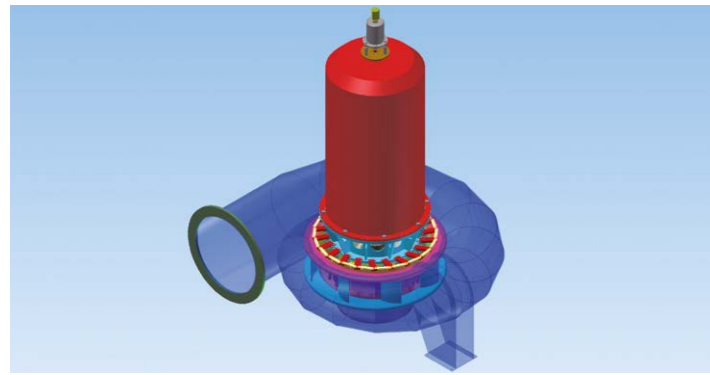


CUSTOMISED CONSTRUCTIONS OF TURBINES DESIGNED BY WTW

WTW specializes in design of non-standard constructions of turbines, such as:

- Kaplan spiral turbines
- Propeller turbines
- Siphon turbines

Examples:



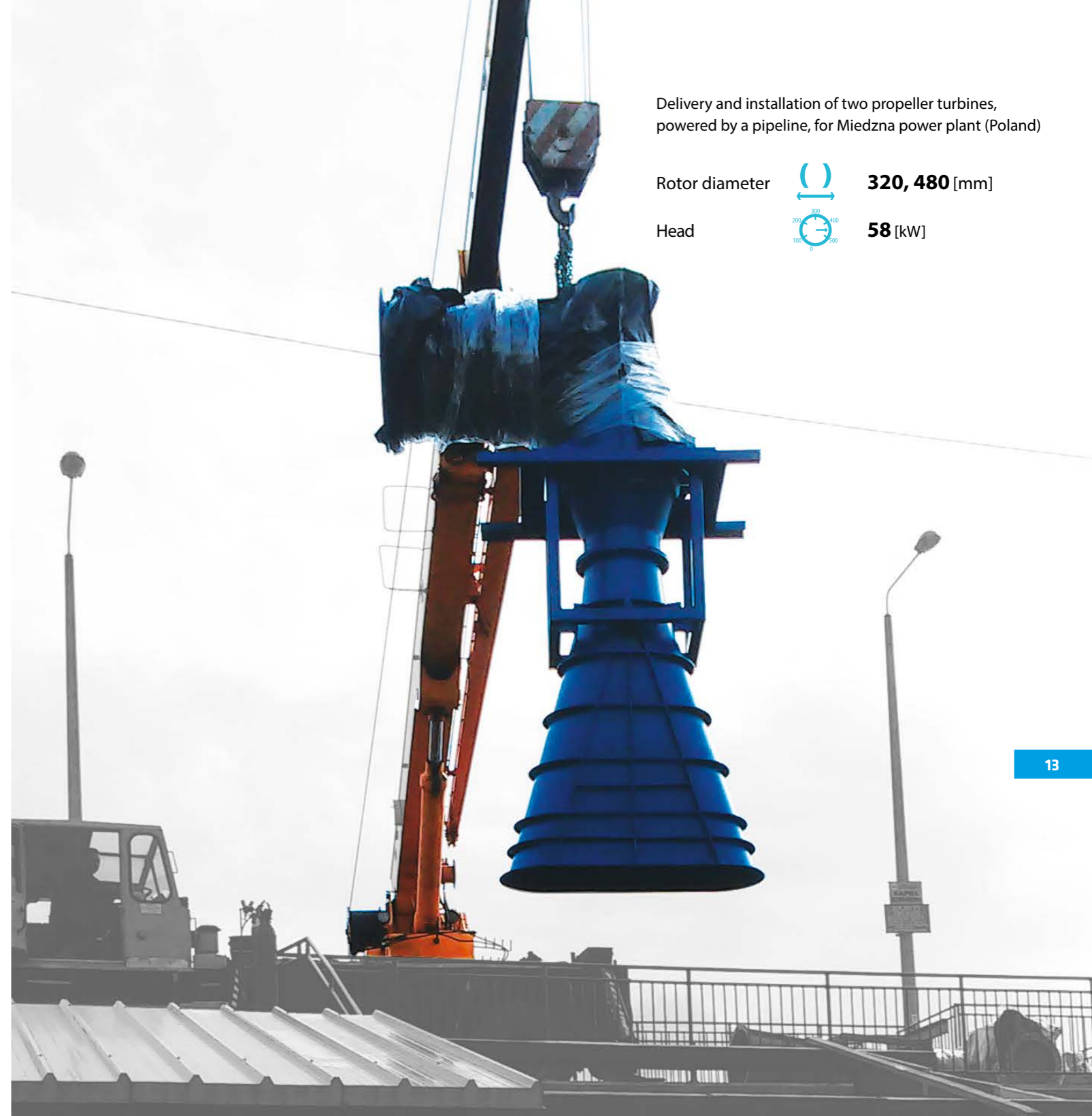
Kaplan spiral turbine

Rotor diameter		830 [mm]
Head		16 [m]
Output		480 [kW]



Kaplan turbine at Chańcza reservoir (powered by overflow pipeline)

Rotor diameter		590 [mm]
Head		11,9 [m]
Output		177 [kW]



Delivery and installation of two propeller turbines, powered by a pipeline, for Miedzna power plant (Poland)

Rotor diameter		320,480 [mm]
Head		58 [kW]

DROZDY (Belarus) – delivery and installation of 4 Semi-Kaplan turbines, powered by siphon pipelines, with output of 4 x 102 kW at Drozdy hydroelectric power plant (Belarus).





Reference list



Budujemy turbiny... od 1986 roku Wytwórnia Turbin Wodnych

LISTA REFERENCYJNA / REFERENCE LIST / РЕФЕРЕНЦ-ЛИСТ

LOKALIZACJA NAME МЕСТО	KRAJ COUNTRY СТРАНА	TYP TURBINY TURBINE TYPE ТИП ТУРБИНЫ	SPAD HEAD НАПОР	MOC OUTPUT МОЩНОСТЬ
2016				
Favria	IT	d 560 - Fv	4.6 m	51 kW
Canale Molino	IT	d 720 - Fp	4.0 m	70 kW
Młynów	PL	d 2100 - Fk	2.5 m	225 kW
Medzhibozh	UA	d 1090 - Fh	3.7 m	166 kW
Berezovka	UA	d 560 - Fv	9.0 m	119 kW
Lososianka	BY	2 x d 720 - Rvsk	2.5 m	56 kW
2015				
Bogino	BY	2 x d 830 - Fv	5.5 m	328 kW
Miedzna	PL	d 480 - Rv , d 320 - Rv	5.8 m	58 kW
2014				
Kosivka	UA	d 720 - Fv	5.5 m	106 kW
Leevi	EE	d 1250 - Fv	4.1 m	233 kW
Samchyky	UA	d 1090 - Fh	3.4 m	163 kW
Gubyn	UA	d 1250 - Fk	4.0 m	221 kW
Davydovka	UA	d 1090 - Fh	3.2 m	147 kW
2013				
Staraya Chortoriya	UA	d 1430 - Fh	4.5 m	363 kW
Chańcza	PL	d 590 - Fv	11.9 m	177 kW
Ścinawka	PL	d 950 - Fk	3.4 m	96 kW
2012				
Aleksandrija	BY	d 560 - Fv	6.0 m	77 kW
Szabany	BY	2 x d 1090 - Fv	8.1 m	824 kW
2011				
Leevaku	EE	d 1090 - Fh	3.0 m	130 kW
Cieszyn	PL	2 x d 1090 - Fv	6.0 m	586 kW
Novolabun	UA	d 1090 - Fk	3.7 m	140 kW



CERTYFIKAT
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ISO CERT sp. z o.o. zaświadcza, że certyfikowana organizacja wprowadziła i stosuje system zarządzania zgodny z wymaganiami:
PN-EN ISO 9001:2009

Zakres certyfikacji:
sprzedaż turbin wodnych

Numer certyfikatu: 145278/C/2
Data wydania: 27.01.2016
Okres ważności certyfikatu: 27.01.2016 - 06.03.2017

Certyfikat wystawiony przez
ISO CERT sp. z o.o.

Tomasz Wycisk
Dyrektor ds. Certyfikacji

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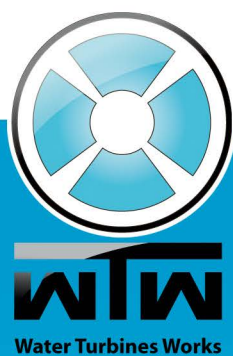
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