

The **WH** type, multi-stage
rotodynamic pumps

Multi-stage impeller pumps WH

The **WH series pumps** are centrifugal, multi-stage horizontal pumps with ring sections with closed impellers and centrifugal-centripetal stators. The WH pumps are designed for pumping clean or slightly polluted liquids (maximum content of impurities – 100 mg/dm³ for the WHA type pumps and traces of non-abrasive particle content for the WHI, WHS and WHG) with temperatures of up to 140°C, within the resistance range of the materials used for their construction.

Technical data

Capacity	up to 700 m ³ /h	
Delivery head*	up to 700 m	
Rotational speed	2950/1450 1/min	
Temperature of pumped liquid*	up to 140 °C	
Ambient temperature	up to 40 °C	
Maximum pressure in housing*	75 Bar	
Maximum supply pressure*	10 Bar	
Flange sizes	Suction flange acc. to PN EN 1092	Discharge flange acc. to PN EN 1092
WH.1	DN40 PN16	DN32 PN40
WH.2	DN50 PN25	DN40 PN100
WH.3	DN65 (DN100)** PN25	DN50 PN100
WH.4	DN80 PN25	DN65 PN100
WH.5	DN100 (DN150)** PN25	DN80 PN100
WH.6	DN125 PN16	DN100 PN40
WH.7	DN150 PN16	DN125 PN40
WH.8	DN200 PN16	DN150 PN40
WH.9	DN250 PN16	DN200 PN40

Material execution

Name	1	2	3	4	5
Stator housing	GG25 (GGG40*)	B101	GGG40	200-400 (GS-C25)	G-X5CrNiMo19112 (CF8M, AISI316)
Self-priming housing					
Discharge casing					
Suction casing	GG25				
Impellers			B101		
Initial impeller	B101				
Stators	GG25				
Bearing housing	GG25	GG25	GGG40	GG25	GG25
Rotary impeller	B101	B101	B101	B101	G-X25 CrNiMo 2593 (AISI316)
Circulation members	GG25	ZbCr32	GGG40	200-400 (GS-C25)	G-X5 CrNiMo19-11-2 (CF8M, AISI316)
Shaft	45	1H18N9T	2H13	45	H17N13M2T
Protection sleeves	2H13			2H13	
Wear rings	ZbCr32	ZbCr32	ZbCr32	ZbCr32	G-X25 CrNiMo 2593 (AISI316)
Suction casing - axial inlet	GG25	B101	GGG40	200-400 (GS-C25)	G-X5 CrNiMo19-11-2 (CF8M, AISI316)

* Concerns selected constructions
** Concerns the WHI and WHG pumps with axial inlet

WH pump marking structure

Series name	Multi-stage pumps
Construction type	WH A 3 14 1 1 5 1 3
Discharge flange diameter	1 DN32, 2 DN40, 3 DN50, 4 DN65, 5 DN80, 6 DN100, 7 DN125, 8 DN150, 9 DN200
Number of stages and trimming no.	2-14, 22-34, 42-54
Material execution	1 Standard execution, 2 Maritime execution, 3 Execution for liquid fuels, 4 Strengthened execution, 5 Acid resistant execution, 9 Non standard execution
Operating temperature	1 For liquid in temperature from -20 to +80°C, 2 For liquid in temperature from +80 to +140°C
Sealing	1 Gland packing, 5 Single front sealing, 6 Single front sealing, unbalanced
Bearings	1 Ball bearings lubricated with grease, 5 Slide bearing
Suction flange setting	1 Upward suction flange, 2 Right suction flange (looking from the motor side), 3 Left suction flange (looking from the motor side), 5 Suction flange with axial inlet

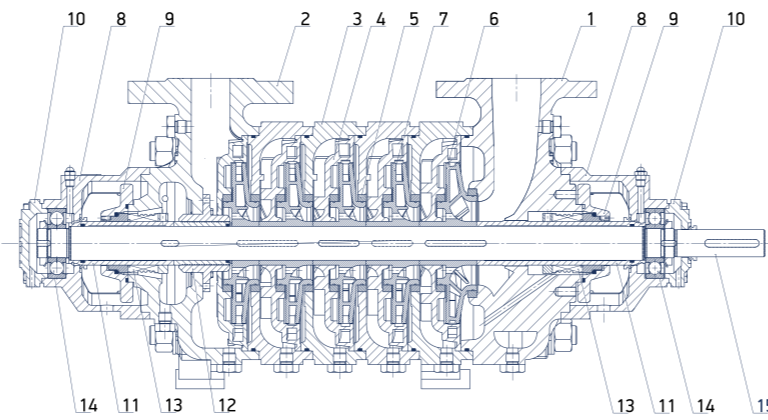
Flexible and individualized solutions

Application

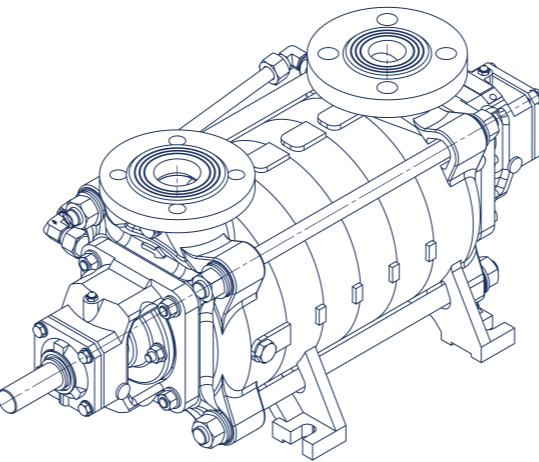
- Power industry – boiler feedwater, hot water, condensate,
- Industrial, pressure boosting and fire-fighting systems,
- Utility, municipal and drinking water systems,
- Distillate, solvents, fuels (including LPG) pumping stations,
- Filtration and reverse osmosis systems,
- Irrigation and snow-making systems,
- High pressure car washes.

WHA/WHP pumps - general application

The WHA/WHP pumps are horizontal multistage pumps with a self-priming member, designed for pumping water at temperatures of up to 140°C and liquid fuels and other liquids within the range of resistance of the materials used for their construction. In the WHA/WHP pumps the discharge flange is directed upwards, when the suction flange can be set as desired every 90°. The first stage of the pump is equipped with a special impeller with increased anti cavitation properties. The impellers of the WHA/WHP pumps are sealed with replaceable wear rings. The shaft is protected with protective sleeves and sealed with gland packing or front mechanical sealing. High pressure in the discharge gland is reduced with a special pressure stuffing system, which reduces substantially the sealing load.

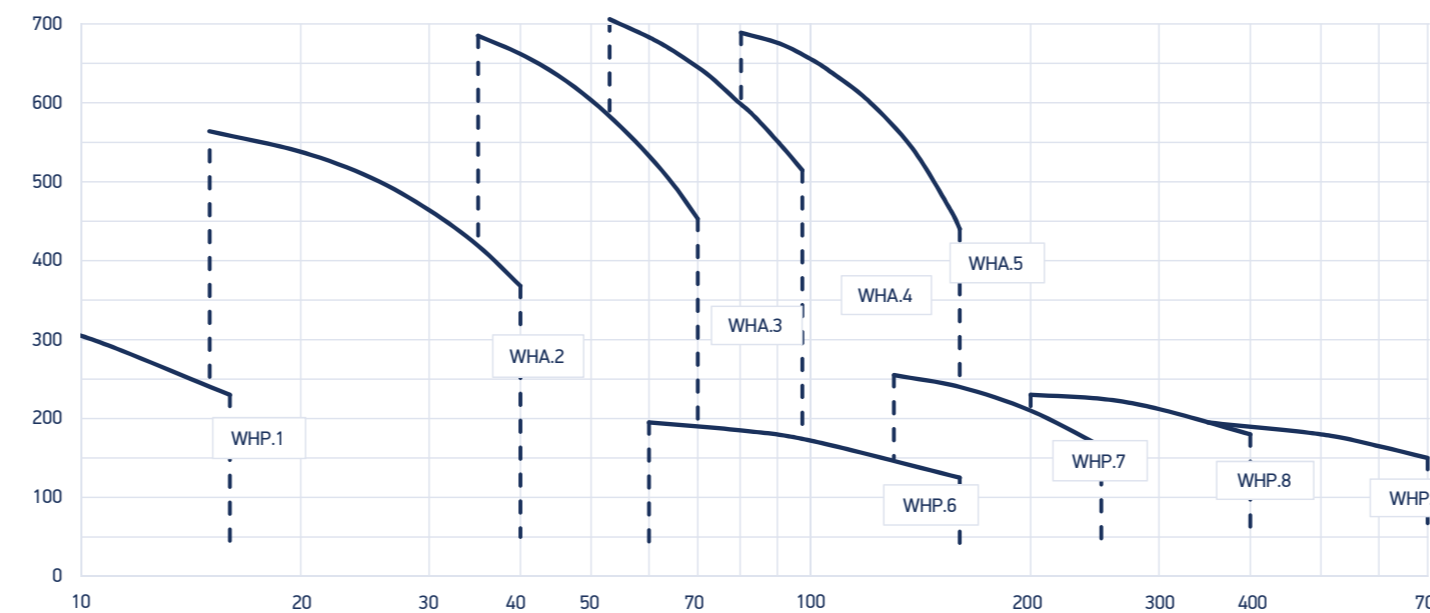


1 suction casing, 2 discharge casing, 3 stator housing, 4 stator, 5 wear ring, 6 impeller of stage 1., 7 n-stage impellers, 8 bearing housing, 9 sealing cover, 10 bearing cover, 11 shaft protective sleeve, 12 gland, 13 mechanical sealing, 14 bearing, 15 shaft



1 suction casing, 2 pumping casing, 3 stator housing, 4 stator, 5 wear ring, 6 impeller of stage 1., 7 n-stage impellers, 8 self-priming impeller, 9 suction member, 10 discharge member, 11 bearing housing, 12 sealing cover, 13 bearing cover, 14 shaft protective sleeve, 15 gland, 16 mechanical sealing, 17 bearing, 18 shaft

Operation fields



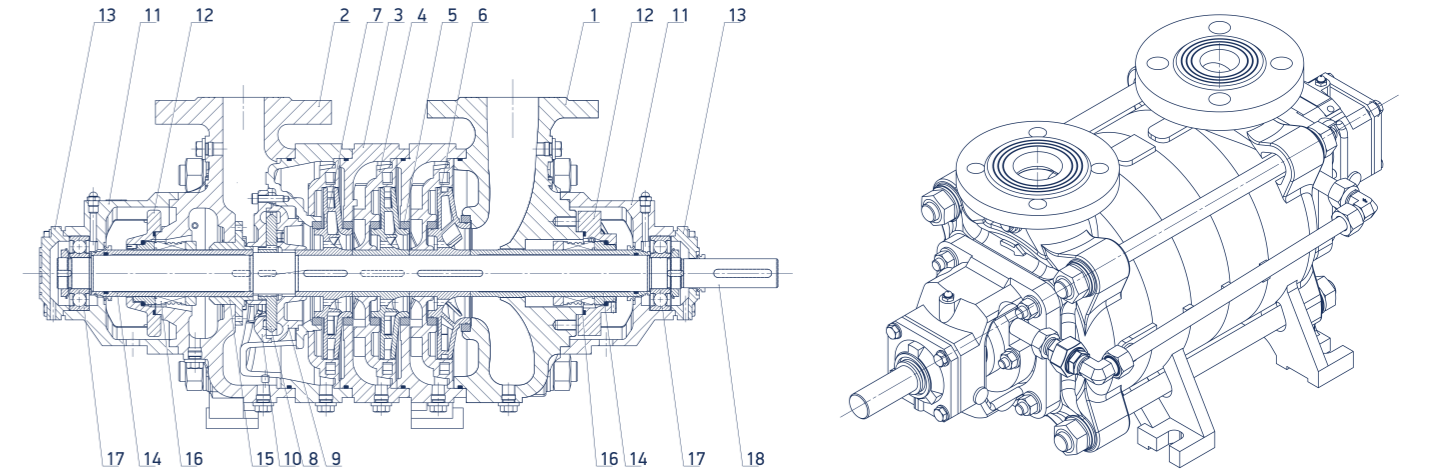
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Advantages

- High efficiency,
- Good anti-cavitation properties,
- Variety of material versions,
- Ability of liquid self-priming (WHS, WHG)
- Simple design,
- Possibility of changing the angle of the suction flange,
- Application of shaft protection sleeves and replaceable wear rings.

WHS pumps - with self-priming member

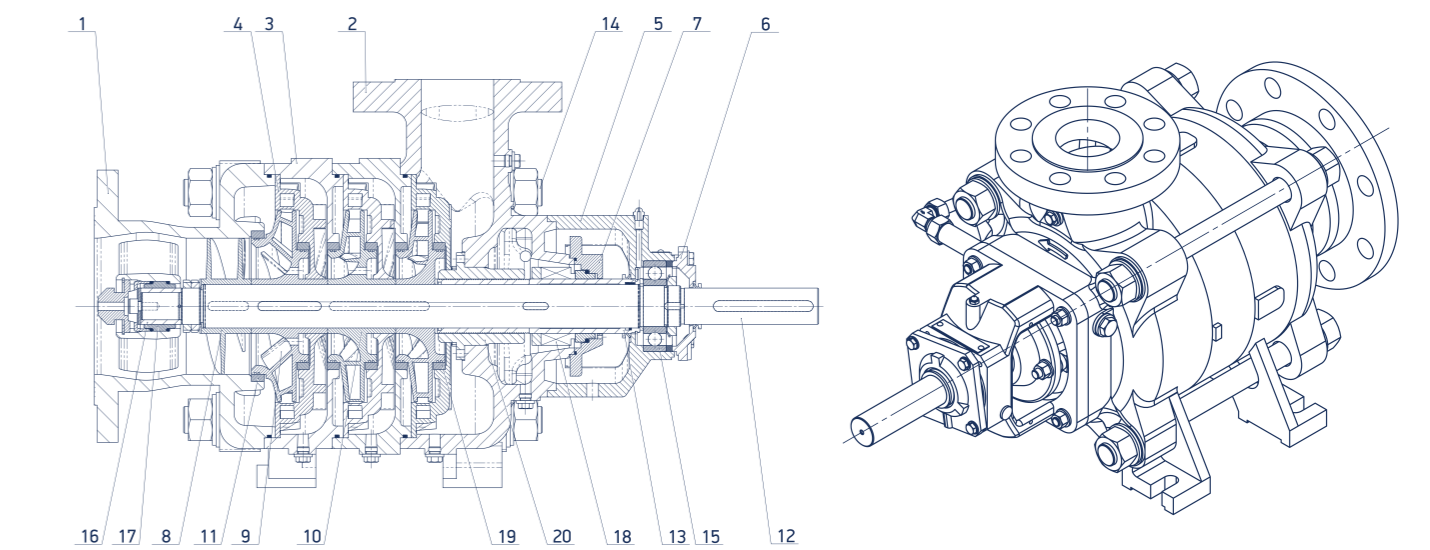
The WHS pumps are horizontal multistage pumps with a self-priming member, designed for pumping water at temperatures of up to 80°C and liquid fuels and other liquids within the range of resistance of the materials used for their construction. The WHS pumps are the special development of the WHA pump, in which after the last stage an additional circulation-vacuum member was applied. The ability of self-priming is executed by the circulation member with side channels and an open impeller, which sucks gas from the inlet space of the centrifugal impeller of the last stage via unloading holes and pumps it directly to the discharge casing. This solution enables suction of the gas from the working space of the pump and the suction installation, resulting in **lack of the need for application of additional priming systems**. The WHS pump sucks by itself the liquid from the tank located below the pump axis, provided its previous priming.



1 suction casing, 2 pumping casing, 3 stator housing, 4 stator, 5 wear ring, 6 impeller of stage 1., 7 n-stage impellers, 8 self-priming impeller, 9 suction member, 10 discharge member, 11 bearing housing, 12 sealing cover, 13 bearing cover, 14 shaft protective sleeve, 15 gland, 16 mechanical sealing, 17 bearing, 18 shaft

The WHI pumps - with an initial impeller with lowered NPSH

A pump of general purpose, adapted to pump a medium in temperature up to 140°C within the resistance range of the materials used for its construction with increased suction properties (with lowered NPSH). The pump is provided with an additional initial axial impeller mounted before the centrifugal impeller of the first stage in the suction casing with the axial inlet, which results in the fact that the required anti-cavitation NPSH surplus of the WHI pump is lower than for the WHA pump.



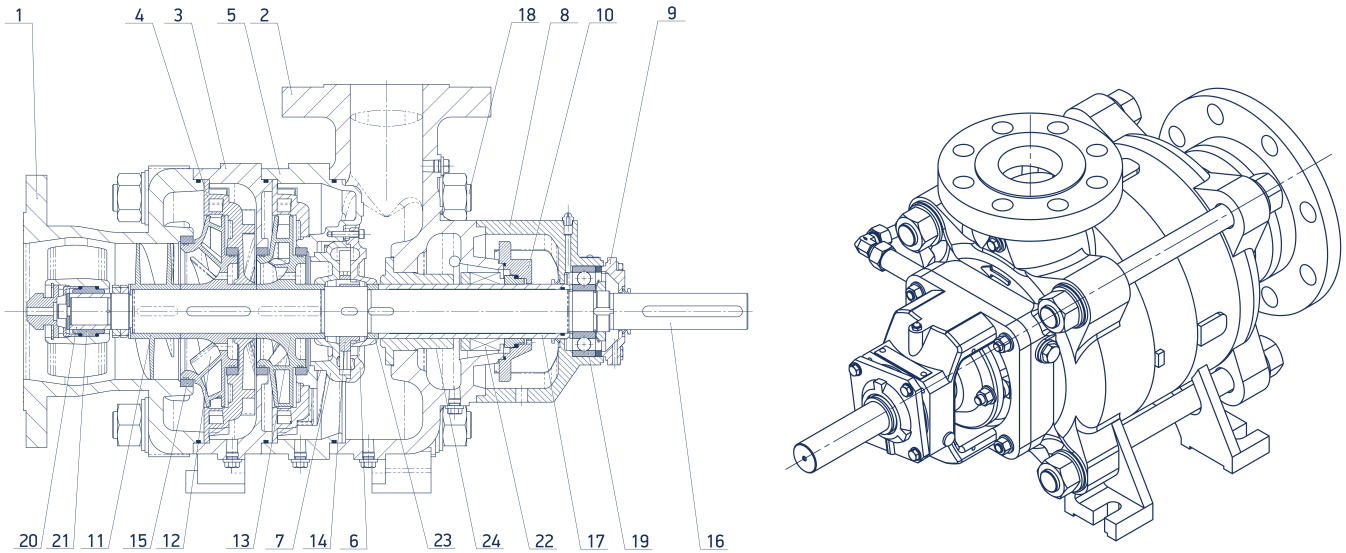
1 suction casing, 2 discharge casing, 3 stator housing, 4 stator, 5 bearing housing, 6 bearing cover, 7 sealing cover, 8 initial impeller, 9 1-stage impeller, 10 2-stage impeller, 11 sealing ring, 12 shaft, 13 shaft protective sleeve, 14 pull screw, 15 ball bearing, 16 slide bearing sleeve, 17 slide bearing, 18 front shaft sealing, 19 wear ring, 20 gland

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The WHG pumps - with the self-priming member and the initial impeller

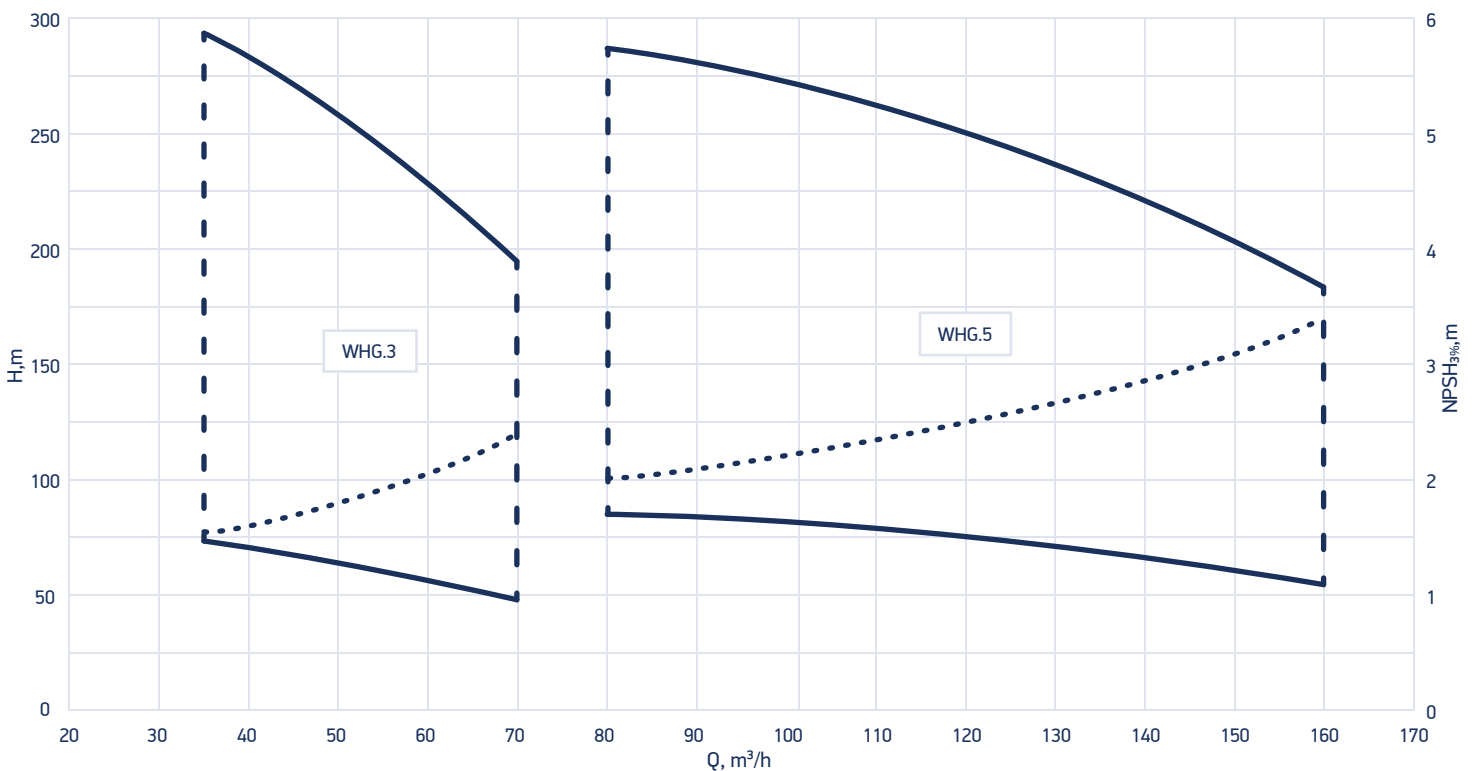
A self-priming pump, adapted to pumping of the medium with temperatures of up to 80 °C within the resistance range of the material used for its construction, with increased suction properties (with lowered NPSH). The WHG pump sucks by itself the liquid from the tank located below the pump axis, provided its previous priming. The ability of self-priming is performed identically as in the WHS pump. The WHG pump is provided with an additional initial axial impeller mounted before the centrifugal impeller of the first stage in the suction casing and with the axial inlet, which results in the fact that the required anti cavitation NPSH surplus is lower than for the WHA and WHS pumps.



1 suction casing, 2 discharge casing, 3 stator housing, 4 stator, 5 self-priming member housing, 6 discharge member, 7 suction member, 8 bearing housing, 9 bearing cover, 10 sealing cover, 11 initial impeller, 12 1-stage impeller, 13 2-stage impeller, 14 side channel impeller, 15 sealing ring, 16 shaft, 17 shaft protective sleeve, 18 pull screw, 19 ball bearing, 20 slide bearing sleeve, 21 slide bearing, 22 shaft front sealing, 23 wear ring, 24 gland



The WHG pump operation fields



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EXPERIENCE

We have been operating since 1862 and we have been active in the pumping industry for over 80 years.

HIGH QUALITY, INNOVATIVE AND INDIVIDUALIZED PRODUCTS

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We cooperate with the largest water supply and sewage plants in Europe, as well as with companies from power and heat generation industry and mines.

GLOBAL RANGE

We export our products to over 40 countries and each year we record export sales increase.

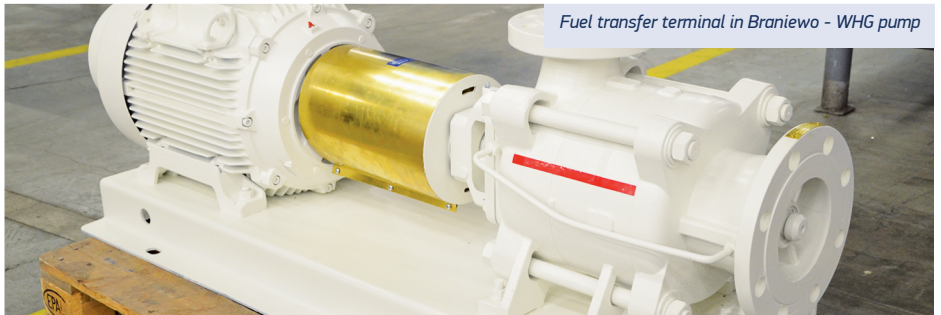
STRONG POSITION IN THE MARKET

We compete successfully with the largest international concerns, offering more and more flexible and individualized solutions and also faster reaction to demands of our customers

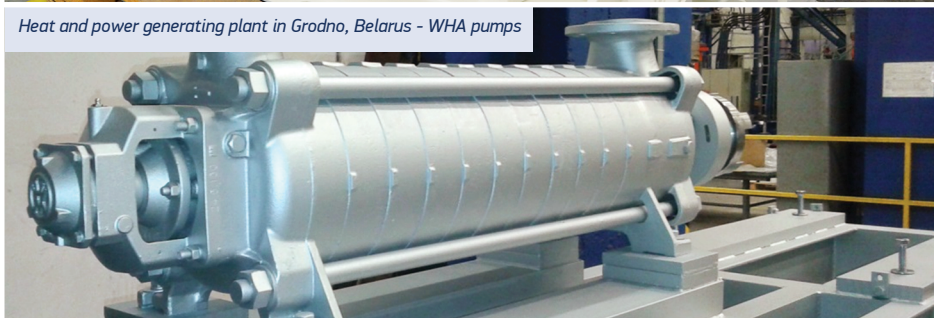
Heat and power generating plant in Mielec - WH pump



Fuel transfer terminal in Braniewo - WHG pump



Heat and power generating plant in Grodno, Belarus - WHA pumps



Flexible and individualized solutions

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