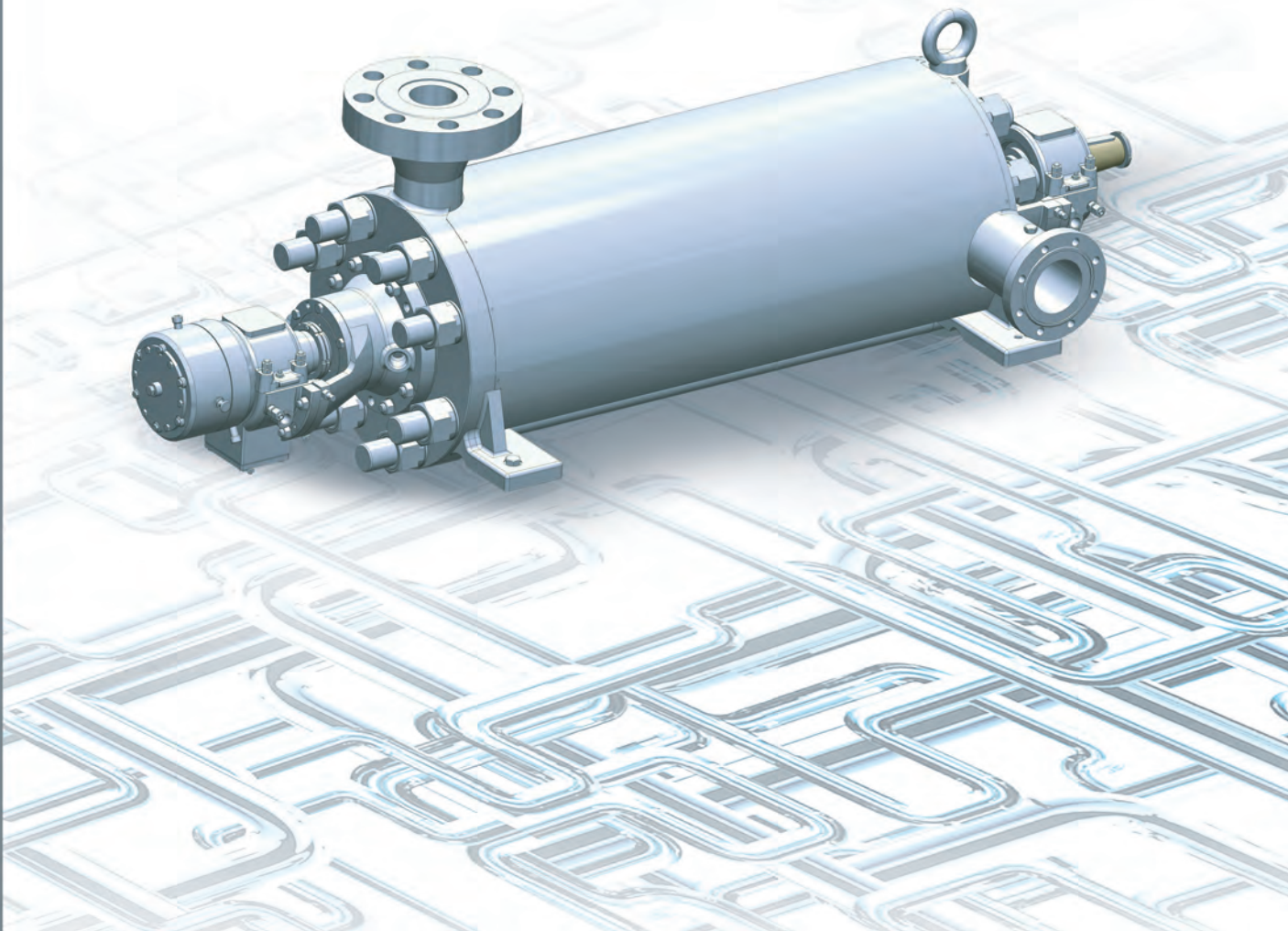




ENGINEERING FLOW SOLUTIONS

**CNS**

**CENTRIFUGAL MULTISTAGE  
WATER DESCALING PUMPS  
BB4 TYPE API 610**



# CNS Pumps For Water Descaling



## Description

The CNS series pumps are centrifugal, multistage, horizontal, with single casing. Due to optimized design features and construction materials have proven their high efficiency, reliability and easy maintenance. Available in extensive range of models.

The CNS pumps have been developed using advanced CFD methods for maximum efficiency and lowered vibration.

The CNS water descaling pumps are manufactured by Nasosenergomash – the HMS Group division in Sumy, Ukraine.

## Application

Water descaling in steel industry

## Parameters

- Capacity range: 30 - 1000 m<sup>3</sup>/h
- Head: up to 2400 m
- Efficiency: up to 83%
- Max operating pressure: up to 270 bar

## Materials

Casing	ASTM 352/352M with corrosion-resistant surfacing
Impeller and diffuser	AISI 420 and AISI 420F
Shaft	AISI 5135, AISI 5135 H, AISI 5140, AISI 5140 H
Sealing	Gland or mechanical seal

## Pumped Media

- Water and similar liquids with temperature up to +60°C
- A wide range of solids
- Density: 1000 - 1200 kg/m<sup>3</sup>
- pH: 6.5 - 9

## Tests

A unique testing equipment, available at the manufacturing enterprises of the HMS Group, is used for the full load string tests with simulation of the real operating parameters including rotation speed, capacity, head, drive power:

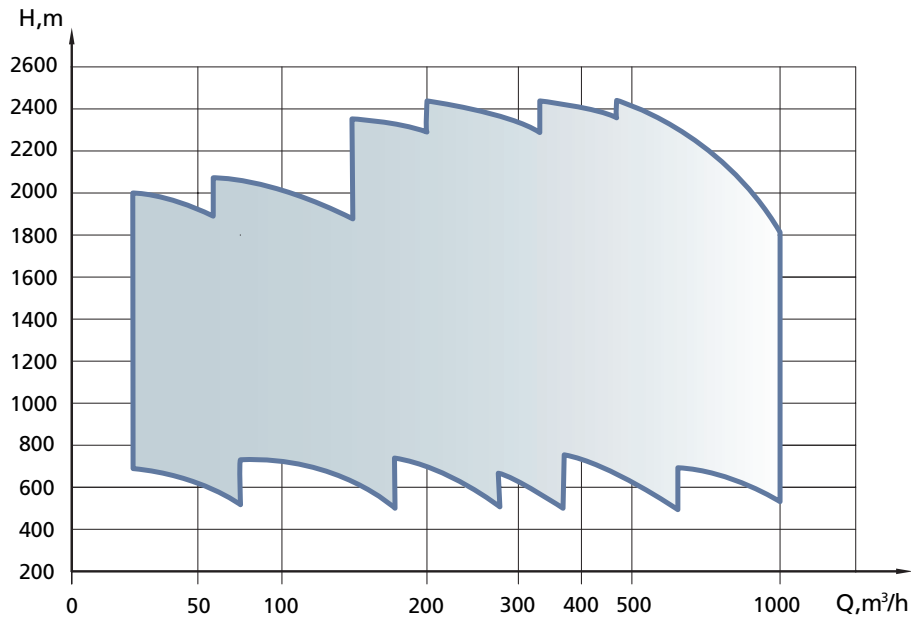
- Capacity: up to 25 000 m<sup>3</sup>/h
- Head: up to 4000 m
- Power up to 14 MW
- Water temperature up to 350 °C

Performance tests including cavitation are carried out in automatic mode. All measuring equipment complies with ISO 9906:1999. The customer receives all pumps with proven parameters.

# CNS Pumps For Water Descaling



## Q-H



## Scope Of Supply\*

- Pump (assembled) with shaft sealing and flanges
- Electric motor
- Coupling with guard
- Auxiliary pipelines
- Baseplate with supports
- Lubrication system
- Instruments
- Spare parts, tools and accessories
- Manual and documentation

## Options

- Bearings with forced or oil bath lubrication
- Hydrocyclones
- Elastic diaphragm coupling
- Oil cooler (air or water), oil lubrication system with gear or centrifugal oil pump
- Single baseplate for pump with motor
- Welded or cast baseplate (frame)
- Explosion-proof version
- DIN / ANSI / ISO flanges

\* Scope of supply is the subject of a specific supply conditions



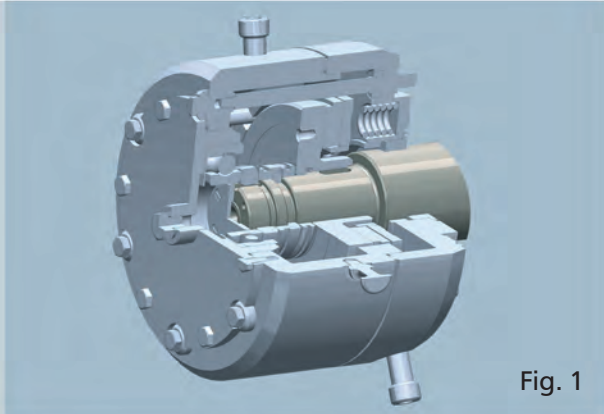


Fig. 1

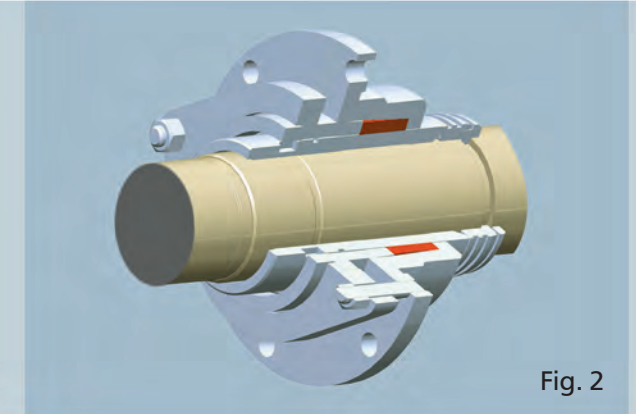


Fig. 2

## Reliability

1. Wear-resistant replaceable wearing rings made of new special materials.
2. Pull-off device for hydraulic balancing disc (Fig.1) for guaranteed clearance between rotor and stator parts in off-loading unit at the pump start/stop for longer life of hydraulic balancing disk device.
3. Bearings vibration and temperature sensors installation spots provided in the bearings housings.

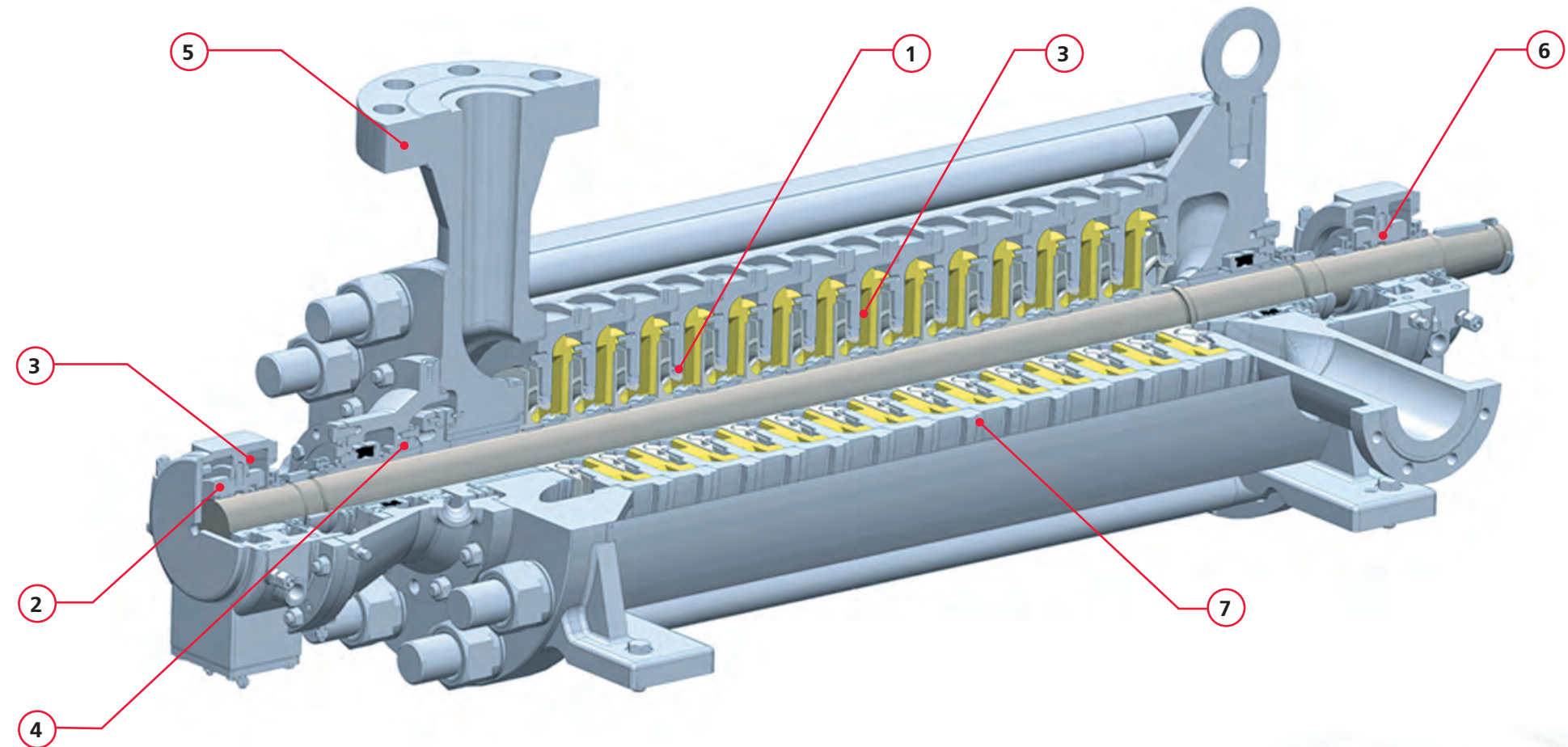
## Easy Installation/Maintenance

4. Mechanical seals complied with API 682 to ensure application of seals from various manufacturers.
  5. Flanges according to DIN / ANSI / ISO (option). Maintenance-free elastic diaphragm coupling to reduce vibration.
- Pump is supplied on separate baseplate or on a general baseplate with motor (option).

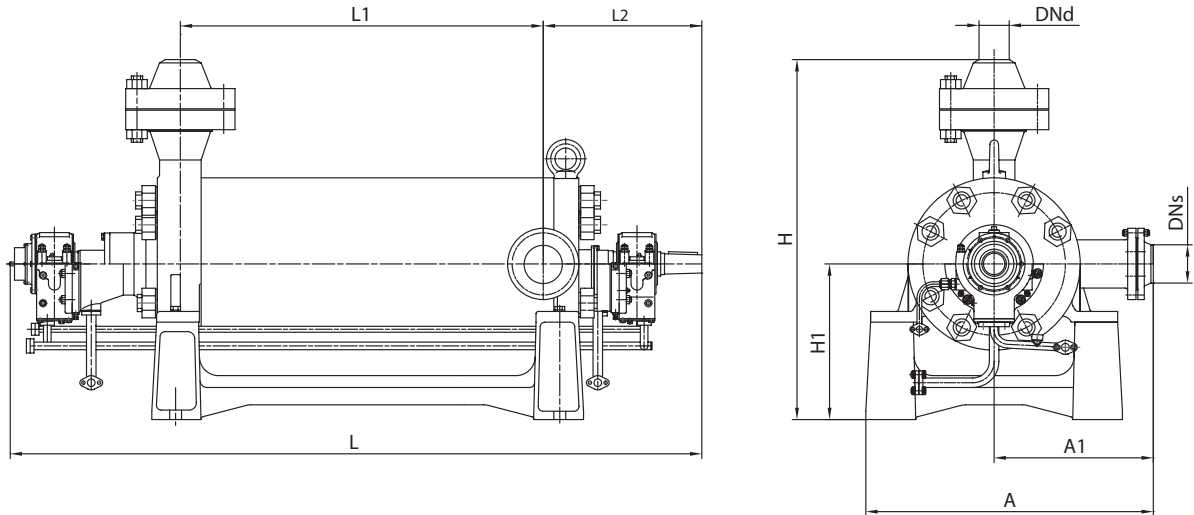
## Low Costs Of Operation

6. Bearings come with forced or oil bath lubrication.
7. Highly unified main parts between pumps of different sizes for low installation and start-up costs, reduced parts inventories, decreased maintenance costs, shorter downtime, and enhanced operability.

Stuffing box or mechanical seals application (Fig.2). Cyclone separators (option) for solids-contaminated liquids.



# CNS Pumps For Water Descaling



Model	DNs	DNd	A	A1	H	H1	L	L1	L2
CNS 30-800-2	80	65	730	345	1060	490	2120 (2420)*	1059	510
CNS 30-1050-2			700	440**	1290	650	2490 (2790)*	1237	635
CNS 30-1422-2							2595 (2895)*	1342	
CNS 45-1050-2	150	125	1210	670	1425	565	2220 (2520)*	902	625
CNS 45-1422-2					1515	655	2505 (2805)*	1187	
CNS 45-1900-2							2885 (3185)*	1567	
CNS 63-1050-2					1425	565	2220 (2520)*	902	
CNS 63-1422-2					1515	655	2505 (2805)*	1187	
CNS 63-1900-2							2885 (3185)*	1567	
CNS 90-1050-2					1425	565	2220 (2520)*	902	
CNS 90-1422-2					1515	655	2505 (2805)*	1187	
CNS 90-1900-2							2885 (3185)*	1567	
CNS 120-1050-2					1425	565	2220 (2520)*	902	
CNS 120-1422-2					1515	655	2505 (2805)*	1187	
CNS 120-1900-2							2885 (3185)*	1567	
CNS 180-1050-2	1425	565	2220 (2520)*	902					
CNS 180-1422-2	1515	655	2505 (2805)*	1187					
CNS 180-1900-2			2885 (3185)*	1567					
CNS 240-1050-2	1425	565	2220 (2520)*	902					
CNS 240-1422-2	1515	655	2505 (2805)*	1187					
CNS 240-1900-2			2885 (3185)*	1567					
CNS 315-1050-2	200	150	1275	685	1635	675	2407 (2707)*	955	640
CNS 315-1422-2							2715 (3015)*	1261	
CNS 315-1900-2							3020 (3320)*	1567	
CNS 500-1050-2	300	200	1330	685**	1727	790	2209 (2509)*	832	730
CNS 500-1422-2							2346 (2646)*	969	
CNS 500-1900-2							2620 (2920)*	1243	
CNS 630-1050-2							2209 (2509)*	832	
CNS 630-1422-2							2346 (2646)*	969	
CNS 630-1700-2							2620 (2920)*	1243	
CNS 630-1900-2							2620 (2920)*	1243	
CNS 720-1050-2							2209 (2509)*	832	
CNS 720-1422-2							2346 (2646)*	969	
CNS 720-1900-2							2620 (2920)*	1243	

\* Dimension in brackets is given for version of the CNSz pump with hydraulic balancing disk device

\*\* Suction nozzle is directed vertically upwards



# HMS Group For Steel & Mining



## Key Facts And Figures

The HMS Group is one of the leading manufacturers and flow control solution providers for steel & mining, oil & gas, water & utilities, power generation and other industries in Russia and the CIS countries.

The HMS Group considers the complex supplies of equipment for various industries as its strategic business direction.

- HMS Group foundation – 1993
- One of the leading manufacturers of pumps, compressors and oil&gas equipment in Russia and CIS
- International experience in supply, commissioning and after sales servicing of the equipment in Eastern Europe, Iraq, Indonesia, India, China, the USA, Russia and CIS
- Manufacturing facilities in Russia, Ukraine, Belarus and Germany
- Over 17 000 employees
- Representative offices in Italy, UAE, Iraq, Turkmenistan and Uzbekistan
- Widespread dealer network

The R&D infrastructure is represented by the six centrally managed centers in Russia and the CIS where the latest versions of the engineering software and simulation methods are used including 3D modeling.

The pumps for steel and mining industries are manufactured in accordance with International and Russian standards such as API, DIN, ANSI, ISO, GOST and can be tailored to the customer specification.

## The HMS Group For Steel & Mining

- Development and manufacturing of the pumping equipment for the water descaling process in steel-making industry, coke hydraulic unloading, water supply at different stages within the steel making process.
- Development and manufacturing of the compressor units for oxygen supply for the smelting processes; nitrogen supply for the various processes at metallurgical plants.
- Complex supplies of the pumping and compressor equipment.
- Installation supervision and commissioning.
- Maintenance, repair and equipment modernization.

The advanced research and development, extensive process expertise with comprehensive understanding of the customer's requirements keep HMS Group consistently ahead of the Russian and CIS markets and allow to grow and expand its international presence.

## The HMS Group's Largest Customers

EVRAZ Group, Severstal, Novolipetsk Steel (NLMK), Magnitogorsk Iron & Steel Works, Norilsk Nickel, ArcelorMittal Temirtau.



Hydromashservice is an integrated trading and engineering company of the HMS Group. Established in 1993.

## Be our Partner

We are looking for experienced dealers & distributors to sell products and services of HMS Group.  
Please forward your queries to below contact details:

12, Aviakonstruktora Mikoyana  
str., Moscow, 125252, Russia

Phone: + 7 (495) 664 8171  
Fax: + 7 (495) 664 8172

e-mail: [hydro@hms.ru](mailto:hydro@hms.ru)  
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[www.hms.biz](http://www.hms.biz)

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