OH3 Series

Technical Catalogue

2015

Our Vision

ASK's vision is to be a recognized leader in innovative, sustainable, engineered, and customer-focused solutions for performance critical applications in the oil and gas, hydrocarbon processing, power generation, pulp and paper, and other selected industries.

Our mission

ASK aims to be a multi-industry company with a strong brand, which provides solutions that combine products, services, engineering, and customer-application expertise. The corporation is close to the customer by being direct-sales driven.
Engineering, innovation, and technology are cornerstones. ASK strives to be an attractive employer and to create an environment where employees can excel. The company focuses on creating value for its customers.

ASK Innotec

The research and development unit of ASK supports the other divisions of the company and industrial companies in their development projects by providing a contract including research and special technical services like diagnostics and certified testing as well as one-off production and engineering. ASK innotec has expertise in materials and surface engineering, fluid technology, as well as in mechanics. Its core competencies in research contract also lie in these classical disciplines.

Certification

Certified quality management ISO 9001 with scope of "Design and manufacturing of process centrifugal pumps according to API standard 610".

Product Description

Using modern computer aided design methods, the pumps are specially designed as heavy duty, minimal wear, long life pumps which have been designed in a modular way, with a number of options available, to ensure full compliance to the customers' exact requirements and specifications. A fully compliant API 610 heavy duty baseplate helps achieve low vibration and noise levels which in turn extends the pump's life and ensures maximum running time. A 'space saving' reduced footprint is also available for use where space is at a premium.

The pumps can be fitted with a variety of proprietary components (i.e. seals, motors & couplings) from all the major manufacturers to cater for customers site preferences. Double mechanical seal arrangements can be fitted with an attached seal support system. This can be supplied by Seal Support System which is designed and manufactured by ASK, or another manufacturer's seal support system can be fitted.

To complete the package a full range of standard material options from SG iron and stainless steel, to duplex are available to match your process fluid. NACE compliant materials are also available. Standard documentation packs including manufacturing data books, material certification, and installation & operating manuals are available to suit the application. Performance testing to API610 / ISO 13709 and various NDE (nondestructive examination) & NDT (nondestructive testing) options are offered to ensure full compliance to our customers' applications. Alternative bespoke package can be tailored to fit your exact requirements.

Field of Application

ASK pumps, OH3 series, are vertical, in-line design, fully compliant with API 610 (OH3), latest edition. These pump offers a space-saving alternative for many overhung process pumps in upstream and downstream services.

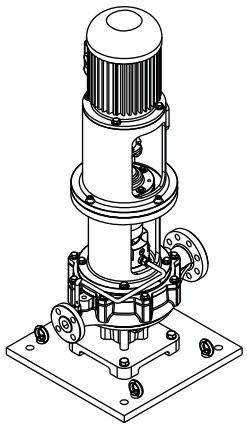
Following services covered but not limited by our OH3 pumps include:

- Petroleum production and refining
- High temperature service
- Hydrocarbon booster
- Gas industry service
- Gas production
- Liquefied Gas processing
- Boiler circulation
- Cooling tower pump
- Water
- Synthetic fuels
- Petroleum distribution
- Petrochemical processing
- Lube oil transfer and feed
- General purpose

Key Features

- OH3 vertical in-line, single-stage, single suction, radially split centrifugal process pumps
- 40 bar pump to API 610 (11th edition) & Atex compliant
- -15˚C to 400˚C temperature applications
- Semi-open & closed impellers
- Side suction, side discharge nozzles with same size to ASME B16.5 class 300
- A range of alloys available on request including NACE compliant materials
- Tested to API610/ISO13709 procedures – Head, Flow, NPSH, Noise & Vibration
- A range of API682 seals & systems (PED compliant)

Product Overview

General description	OH3 series is a single stage, in-line, single suction, vertical centrifugal pump	
Construction	Heavy duty modular design, maximizing flexibility to meet rigorous customer requirements	
Design methodology	Advanced computer techniques including 3D modeling, FEA & CFD	
Design standards	API610 11th:2010 / ISO13709:2009 / ATEX EC-Directive 94/9/EC	
Design pressure rating	Up to 40 bar g @ 20˚C	
Suction pressure rating	Up to 10 bar g (Standard construction)	
	Up to 20 bar g (Heavy duty construction)	
Operating temperature	-15˚C to 150˚C (Standard construction)	
	-15˚C to 400˚C (Heavy duty construction)	
Flow rate	Up to 550m3/h	
Differential Head	Up to 260 m	
Speed	Up to 3000 rpm	
Configuration	Long coupled pump	
	Bare shaft pump	
	Rotating assembly	
Discharge Sizes	Up to DN 150	
Design life	20 years (3 years uninterrupted operation)	

Designation

Example: OH3 50-250-XL / 30 2 S6 D115261 A / EXT4

OH3	50	250	XL	30	2	S6	D	115261[1]	CD	EXT4
Pump type	Discharge nominal dia. in millimeters	Discharge nominal dia. in millimeters	Impeller code	Nominal power of installed driver in kW	No. of poles	Material class acc. to table H1 of API610	Seal type	Seal plan code acc. to API682	Options	Area classification
OH3: vertical in-line single stage single suction radially split centrifugal pumps acc. to API610	Up to 150mm	Up to 450mm	**S**: small **L**: large **XL**: extra large	up to 160kW	**2:** 3000rpm **4:** 1500rpm **6:** 1000rpm	S-1 S-3 S-4 S-5 S-6 S-8 C-6 A-8 D-1	**S:** Single mechanical seal **D:** Double mechanical seal	Each two digits stands for a plan: For example "115261" means plans 11, 52, and 61 have been utilized together.	**A:** No option **B:** Oil mist lubrication **C:** Vibration sensors **D:** Temp. Sensors **E:** Heating jacket **F:** Special bearing arrangement	**SA:** Safe area **EX:** Explosion proof **T1~T6:** Temperature class

1) Other seal arrangements are available on request.

Material Options

Material Class	Casing	Impeller	Shaft
S1 - Carbon Steel / Cast Iron	ASTM A 216 WCB	ASTM A 48 Class 40B	ASTM A 576 Gr. 1045
S3 - Carbon Steel / Ni-resist	ASTM A 216 WCB	ASTM A 436 Type 1,2,3	ASTM A 576 Gr. 1045
S4 - Carbon Steel / Cast Iron	ASTM A 216 WCB	ASTM A 216 WCB	ASTM A 576 Gr. 1045
S5 - Carbon Steel / Carbon Steel	ASTM A 216 WCB	ASTM A 216 WCB	ASTM A 276 Type 420
S6 - Carbon Steel / 12% Cr SS	ASTM A 216 WCB	ASTM A743 CA6NM	ASTM A 276 Type 420
S8 - Carbon Steel / SS 316	ASTM A 216 WCB	ASTM A744 CF-8M	AISI 316
C6 - 12% Cr SS / 12% Cr SS	ASTM A743 CA6NM	ASTM A743 CA6NM	ASTM A 276 Type 420
A8 - SS 316 / SS 316	ASTM A 743 CF-8M	ASTM A743 CF-8M	AISI 316
D1 - Duplex SS / Duplex SS	EN10213-4 / 1.4517	EN10213-4 / 1.4517	ASTM A 240-SS31803

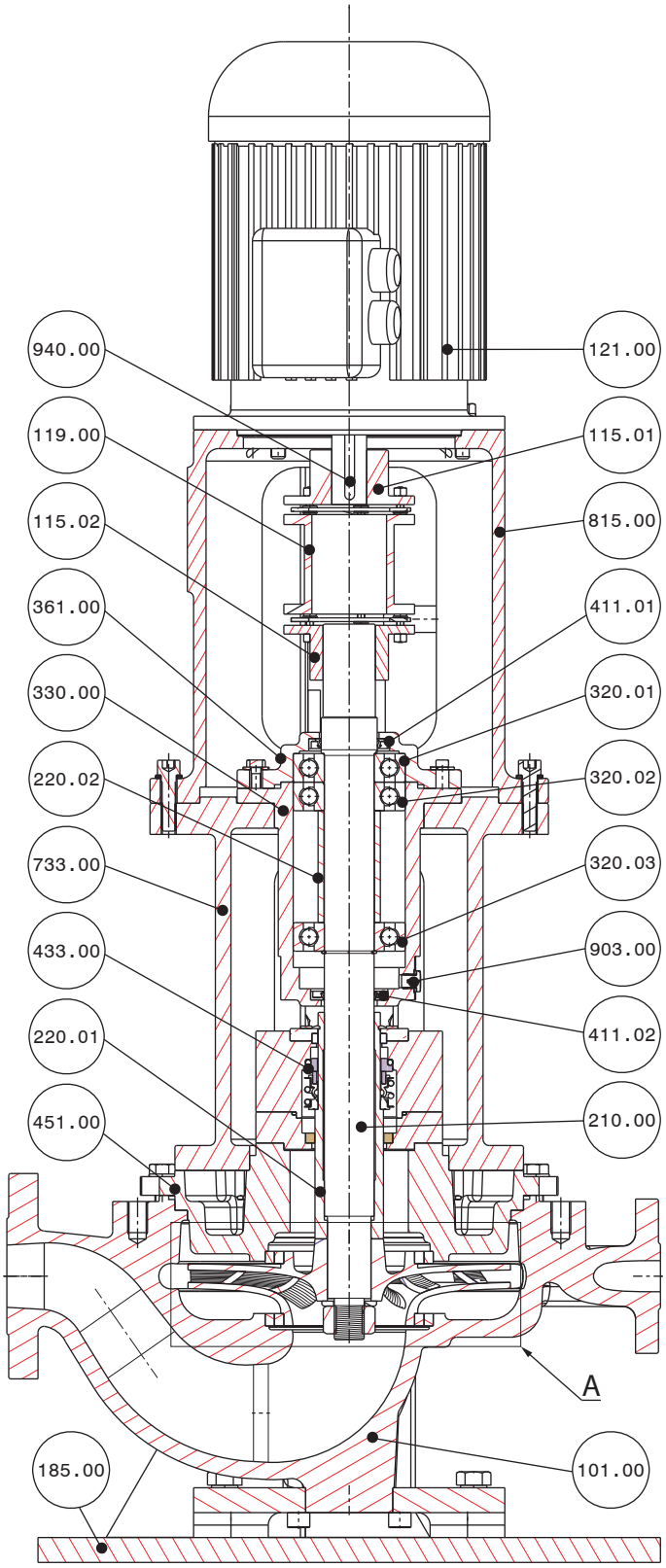
Product Benefits

- 3mm corrosion allowance to API610
- 2 x API allowable nozzle loads
- Interchangeable Impeller and wear parts
- All bearing housings are drilled and tapped for grease or oil lubrication.
- The standard coupling guard meets API 610 requirements
- FEA was used to analyze the stand to assure that pumps operate well away from any natural frequencies per API610
- Rigid shaft assembly limits deflection at seal faces to less than 0.002 in. (0.05 mm) under the most severe operating conditions
- Pump & driver support stand surfaces are fully machined to assure flat mounting surfaces and alignment rigidity
- In-Line Suction and Discharge Simplifies piping design and construction
- Smooth operation with low vibration levels due to static & dynamic balancing of impeller and other rotating parts.
- ISO-13709 (API 610) Table 6 seal chambers for improved seal life.
- Fits for mechanical seals as per ISO 24109 / API 682 in cartridge design for easy installation and removal
- Lower installation costs, reduced footprint & space saving design

Product Options

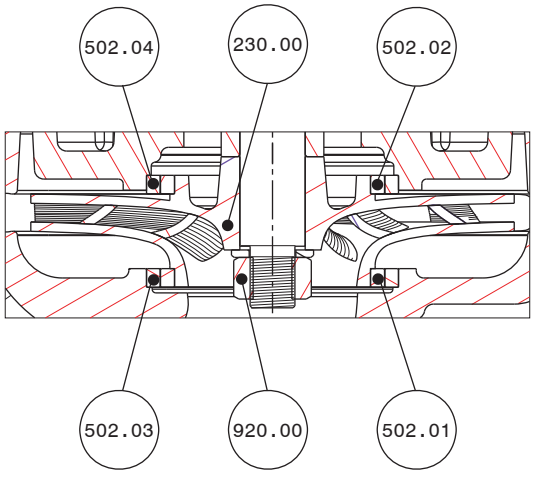
- Materials variety acc. to API 610
- Various types of cartridge mechanical seals available
- Impeller trimmed to match the specified duty point
- Several hydraulic systems per pump size
- Grease or oil lubricated bearing bracket
- A variety of instrumentation options are available for monitoring all key operating parameters (temperature, pressure, vibrations, etc.)

General Sectional Drawing



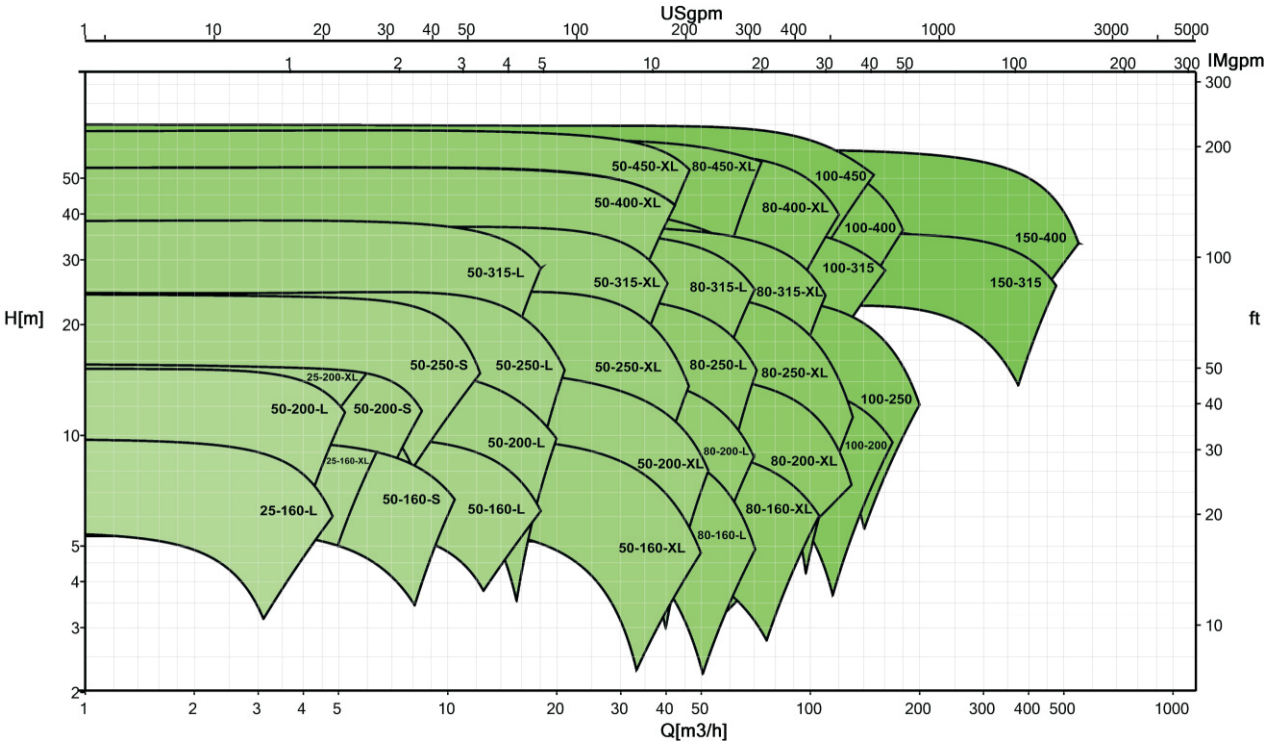
Part no.	Part name
101.00	Casing
115.01	Coupling hub
115.02	Coupling hub
119.00	Coupling spacer
121.00	Electromotor
185.00	Pump support
210.00	Shaft
220.01	Shaft sleeve
220.02	Shaft sleeve
230.00	Impeller
320.01	Deep groove bb.
320.02	Deep groove bb.
320.03	Deep groove bb.
330.00	Bearing housing
361.00	Bearing cover
411.01	Oil seal
411.02	Oil seal
433.00	Mechanical seal
451.00	Casing cover
502.01	Front impeller wear ring
502.02	Rear impeller wear ring
502.03	Front casing wear ring
502.04	Rear casing wear ring
733.00	Connector piece
815.00	Connector piece
903.00	Oil drain plug
920.00	Impeller nut
940.00	Parallel key

Detail A

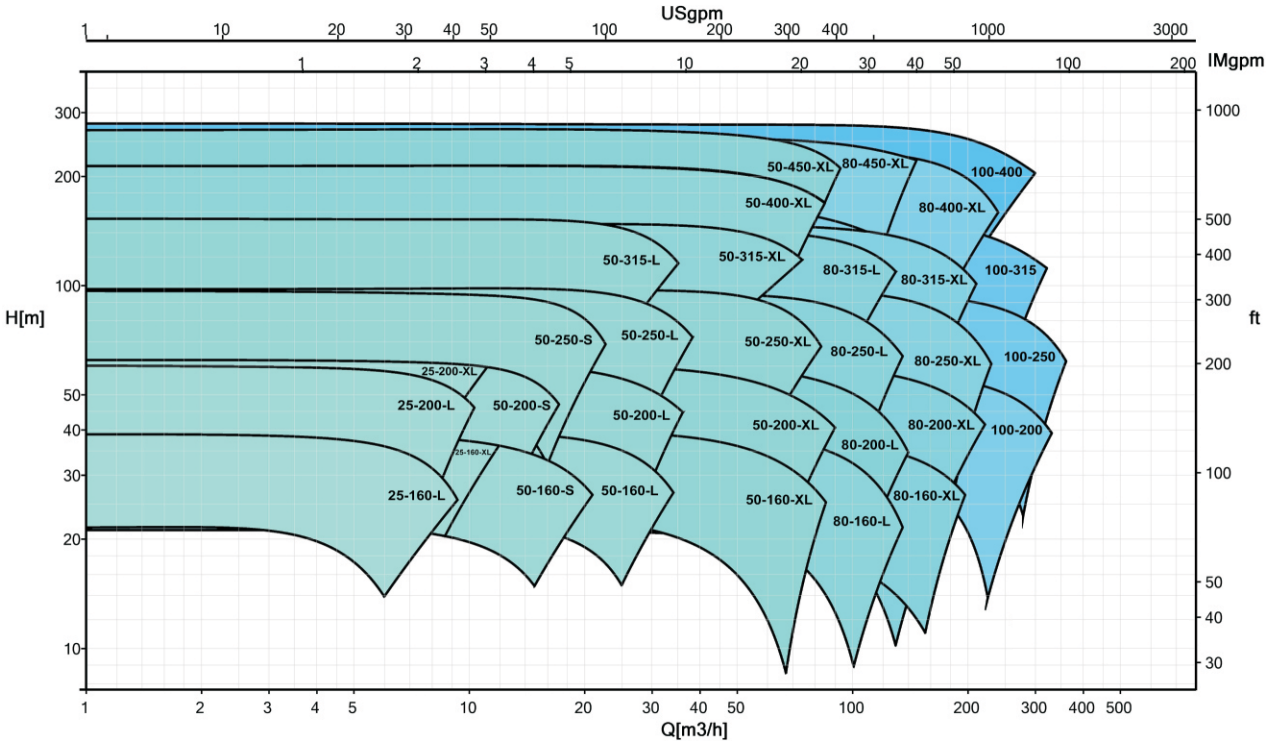


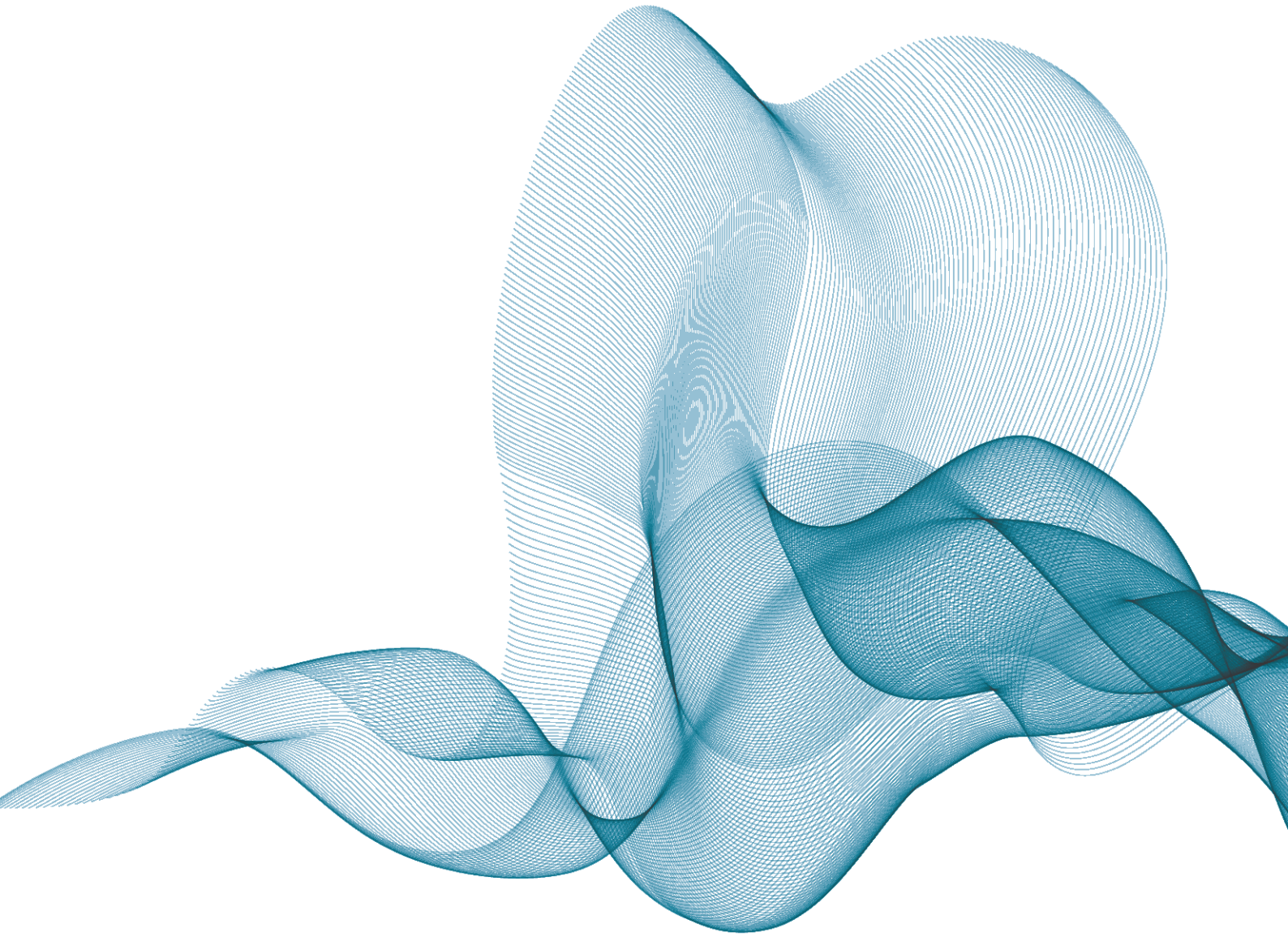
Hydraulic Coverage

1450 rpm



2900 rpm





ARYA SEPEHR KAYHAN

2nd Floor, No. 4, Barmak Alley, AlvandSt.,
Argentina Sq., Tehran, Iran
Tel: (+98) 21 88813461~3
Fax: (+98) 21 88813464