



Tiande Pump has been designing and manufacturing pumps since 1993. Today the company is recognized for the quality and reliability of its products.

- Tiande Pump was founded in 1993
- High-tech Enterprise since 2005
- Top API 610 high-speed pump manufacturer of China
- Tiande Pump is a first class supplier whose products are broadly recognised in the industry. Membership of SINOPEC and CNPC major Pump Supplier(First-grade) Membership of CNOOC Pump Network Supplier. More than 800 end users, and over 11,000 sets of high-speed pumps installed worldwide
- Upgrading and making of various types of high-speed pumps



Tiande is not only a pump manufacturer, but also a R&D institute of API 610 high-speed pump in China

- Cooperate with Zhejiang University and Zhejiang SCI-TECH University
- National key laboratory test base
- The highest award in China for API 610 high-speed pump by National Science and Technology Progress Award(STP)in 2000
- Awarded for the successful design and manufacturing of two stage high-speed pump(630kw) by the government in 2014
- The highest award in Zhejiang for API 610 high-speed pump by Zhejiang Provincial Science and Technology Progress Award in 2020
- State sponsor enterprise for development of API 610 high-speed pump since 2000

Quality Management System

Tiande pump has established a perfect quality management system and achieved ISO9001:2015, ISO14001:2015,OHSAS 18001:2018 and API-Q1 certificate

Test Ability

Chemical analysis	Magnetic Particle Testing (MT)	PMI
Spectrum analyzer	Radiographic testing (RT)	Balancing
Impact Test	Ultrasonic Testing (UT)	Hydrostatic Test
Tensile and Yield Test	Liquid Penetrant testing	NDE(Non Destructive Test)
Hardness Test	Visual testing (VT)	



- National recognized class B test bed
- Adopting the advanced and powerful Computer Assisted Testing System
- Automatic pump testing process for convenience, accuracy and reliability
- Compliance with the accuracy requirements in API 610 and ISO 9906 Grade 1



浙江天德泵业有限公司

ZHEJIANG TIANDE PUMP COMPANY LIMITED

Address: No.186, Yinxing Road, Cangnan Industrial park, Cangnan County 325800,Zhejiang, China

Telephone: 86-577-68806085

Fax: 86-577-68806083

E-mail: sales@tiandepump.com

Website: http://www.tiandepump.com

TIANDE PUMP (ZHEJIANG)

General Introduction

- Tiande Pump is a leading pump manufacture focusing on High Speed Pumps
- We provide the highest in equipment quality & reliability, technical processing assistance, equipment servicing, training and spare parts through
 - ◆ Our highly skilled and dedicated employees.
 - ◆ State-of-art and patented products .
 - ◆ Strict manufacturing process.



Technological Achievement

Various technical achievements reference to our addressed markets.All technologies are developed by ourselves

- 4 patents for inventions
- 19 Utility model patents
- 2nd class prize of National Science and Technology Award

Strong R&D Capability

All technologies are developed in house

We have an excellent technical team to design and develop new products, composed of several top experts, so we can provide strong technical support for the market

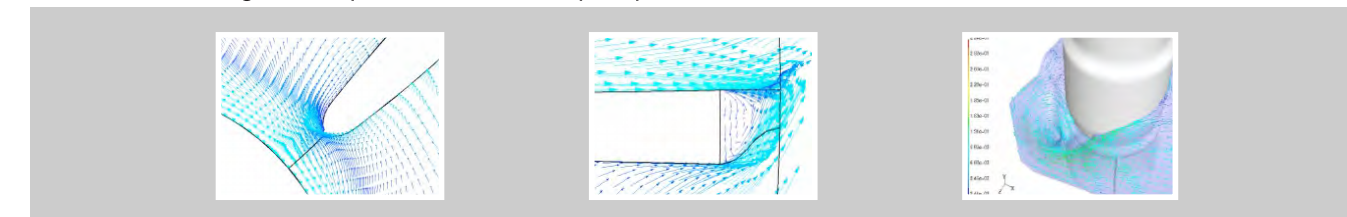
- Experts who have senior experience in the high-speed pump industry
- Expert who is one of principals of National High-tech R&D Program (863 Program)
- Expert who enjoys State Council Special Allowance
- Five experts who are leading the expert in pumps and or material in China
- Joint development with Zhejiang University and Zhejiang SCI-TECH University

We have an advanced Computer Assisted System for design and manufacturing to keep ahead and assure products quality and reliability

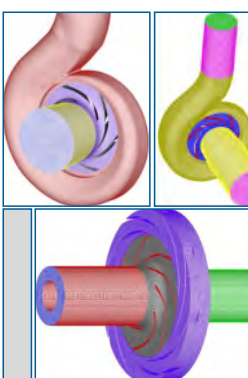
- Three-D CAD (UG, Solidworks)



- CFD, Design and optimization of the pump



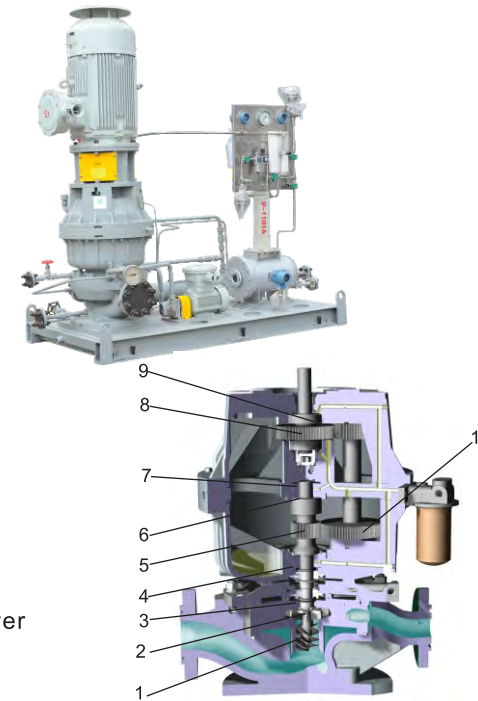
- Mechanical Design (Ansys), Mechanical design are validated by Finite Element Method (FEM), in particular regarding the model analysis of the pump.



- Research, upgrade and integration based on the feedback from our experience
- Perfect and mature technologic process
- To fulfill the requirements of our customers, we customize our pumps by adopting new design concepts

GSB-L Series

ZHEJIANG TIANDE PUMP



Model Description:

GSB	-	L1/2/3	-	Flow	/	Head
1		2		3		4

- GSB: High-speed Pumps
- L: Vertical 1-Single stage increase speed, 2-two stage increase speed, 3-two stage increase speed for high power
- Flow: Design flow rate (m³/h)
- Head : Design head (m)

Forced lubrication

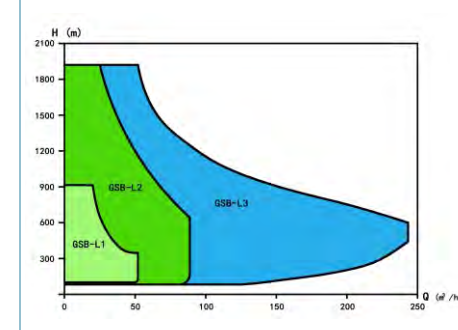
Vertical high-speed integral gear pump

The inlet and outlet flanges of the pump body are symmetrical on the same horizontal line

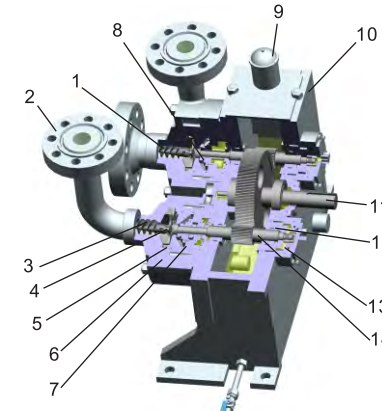
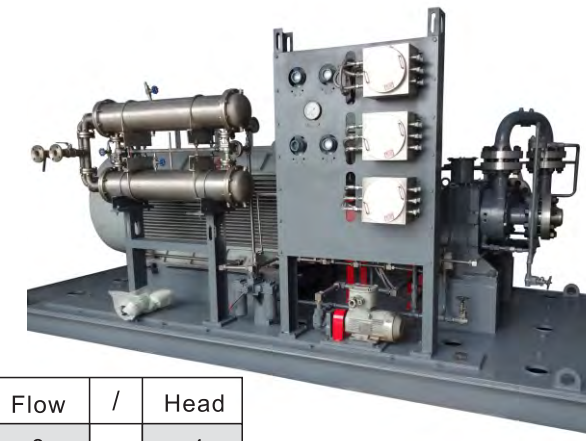
- ①Inducer ②Impeller ③Mechanical seal
- ④Mechanical seal ⑤High-speed shaft
- ⑥High-speed bearing ⑦Thrust bearing
- ⑧Low-speed shaft
- ⑨Lower input shaft bearing ⑩Idler shaft

Performance Specification

Series	Flow Range	Head Range	Motor power	Operating Temperature	Velocity Range
GSB-L1 Series	5m ³ /h~52m ³ /h	70m~920m	5.5kW~37kW	-130℃~340℃	4800rpm 14200rpm
GSB-L2 Series	5m ³ /h~90m ³ /h	250m~1220m	37kW~160kW	-130℃~340℃	7850rpm 22700rpm
GSB-L3 Series	10m ³ /h 227m ³ /h	500m~1980m	132kW 315kW	-130℃~340℃	7850rpm 22700rpm



GSB-S Series



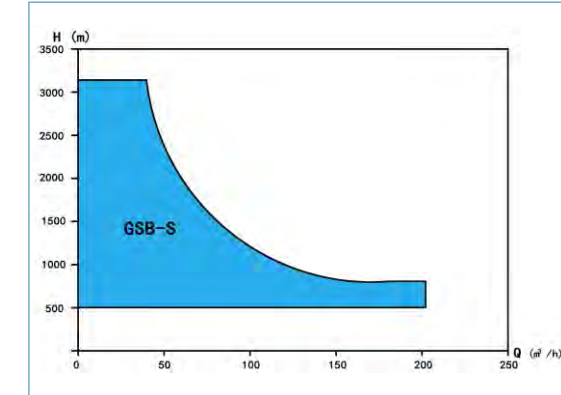
Model Description:

GSB	-	S	-	Flow	/	Head
1		2		3		4

- GSB: High-speed Pumps
- S: Forced Lubrication Dual-head
- Flow: Design flow rate (m³/h)
- Head : Design head (m)

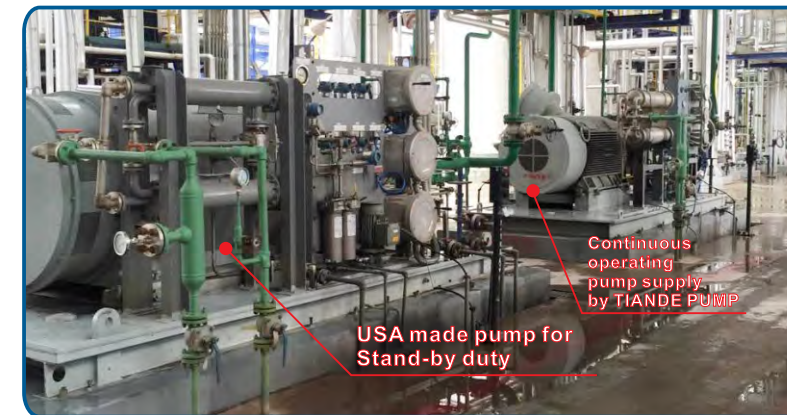
- ①Inducer ②Raised Face Flanges ③Inducer ④Impeller ⑤Impeller ⑥Pump Casing ⑦Seal housing
- ⑧Single, Double, & Tandem Mechanical Seal Arrangements ⑨Oil-gas separator ⑩Upper Gearbox Housing
- ⑪Input Shaft Assembly ⑫Radial Journal & Thrust Bearing ⑬Oil Lubrication Groove ⑭Output Shaft Assembly

GSB-S Series Horizontal High-speed Centrifugal Pumps are applied to low flow rate & high head sectors with secondary pump heads. Pumps can be operated in series or in parallel according to the range of the flow and the head. The speed-increasing gearbox uses the horizontally-split structure and the one-stage speed increase. 1 low-speed gear shaft rotates 2 high-speed gear shafts to drive the impeller. The front and rear transverse bearings of the high-speed gear shaft use tilting-pad journal sliding bearings. The high precision parts guarantee stable running, minimal vibration and low noise.

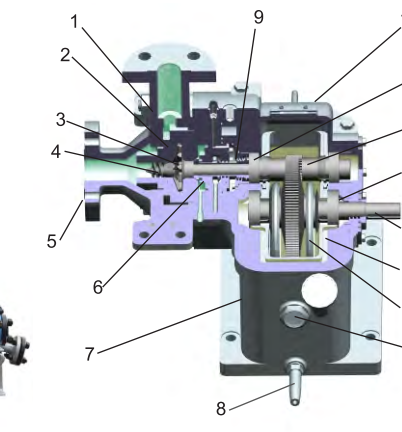
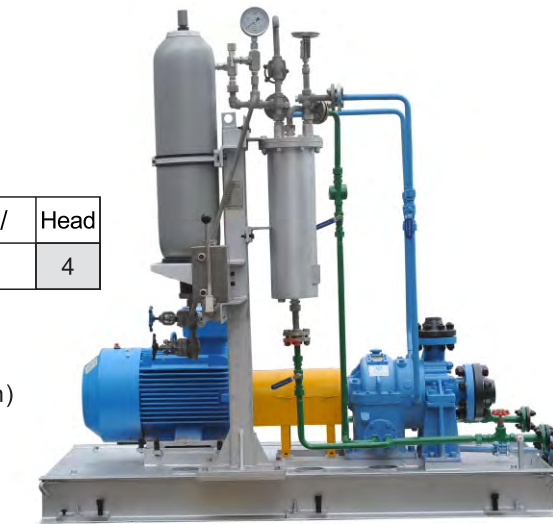


Performance Specification

Flow Range: 10m³/h~200m³/h
Head Range: 500m~3100m
Motor power: 132kW~630kW
Operating Temperature: -60℃~340℃
Speed: up to 19200rpm



GSB-F Series Splash Lubricated



Model Description:

GSB	-	F	-	Flow	/	Head
1		2		3		4

- GSB: High-speed Pumps
- F: Splash lubrication
- Flow: Design flow rate (m³/h)
- Head : Design head (m)

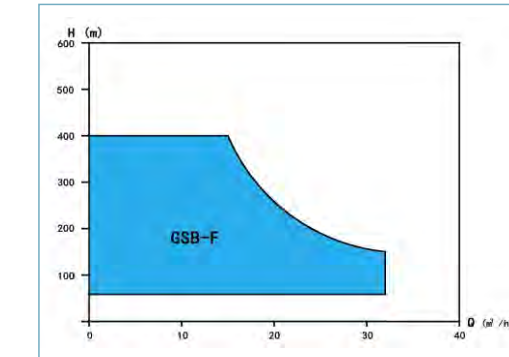
- ①Pump Casing ②Diffuser ③Impeller ④Inducer ⑤Raised Face Flanges ⑥Single, Double, & Tandem Mechanical Seal
- ⑦Lower Gearbox Housing ⑧Oil Exit Pipe ⑨Oil Labyrinth Seal ⑩Upper Gearbox Housing ⑪Output Shaft Rolling Bearing
- ⑫Output Shaft ⑬Input Shaft Rolling Bearing ⑭Input Shaft ⑮Oil Lubrication Groove ⑯Oil slinger ⑰Oil level sight glass

GSB-F Series Splash Lubrication High-speed Centrifugal Pumps are single-stage Splash self-lubrication

The pumps use single-stage gear speed increase.

The lubrication and cooling of the bearing use the patented technologies in The Combination of Structures with Oil Centrifugal Injection Oil Separation with stable oil supply

GSB-F Series Splash Lubricated



Performance Specification

Flow Range: 0.5m³/h~32m³/h
Head Range: 50m~400m
Motor power: 4kW~55kW
Operating Temperature: -60℃~150℃
Speed: up to 11406rpm



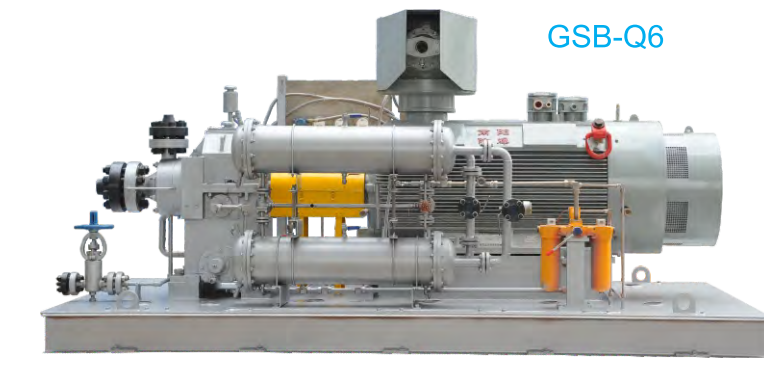
▲ CNOOC Dongfang Petrochemical Co.,Ltd
Alkaline Residue Feed Pump
Flow: 1.2m³/h
Head: 325m
Motor Power: 22kW

▲ CNPC Wuhan Branch Hydro-treating Pump
Flow: 19m³/h
Head: 180m
Motor Power: 22 kW

▲ CNOOC Taizhou Petrochemical Co.,Ltd
Lean Ammonia Pump
Flow: 12m³/h
Head: 310m
Motor Power: 30kW

GSB-Q Series Including six series, from GSB-Q1 to GSB-Q6

ZHEJIANG TIANDE PUMP

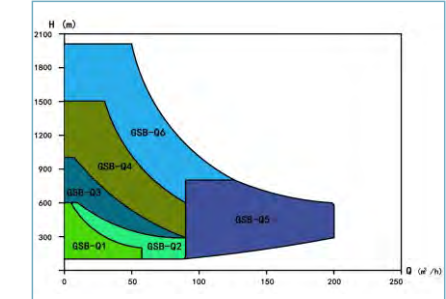
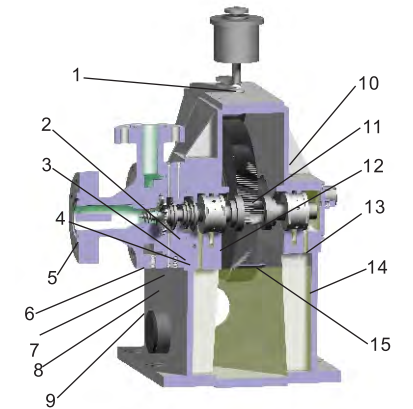


Model Description:

GSB	-	Q1/2/3/4/5/6	-	Flow	/	Head
1		2		3		4

- GSB: High-speed Pumps
- Q: Horizontal, the types NO. from 1 to 6
- Flow: Design flow rate (m³/h)
- Head : Design head (m)

- ①Oil-gas separator ②Seal housing ③Shaft Sleeve
- ④Single, Double, & Tandem Mechanical Seal
- ⑤Raised Face Flanges ⑥Inducer ⑦Impeller
- ⑧Diffuser ⑨Pump Casing ⑩Upper Gearbox Housing
- ⑪Input Shaft Assembly ⑫Radial Journal Bearing
- ⑬Radial Journal & Thrust Bearing
- ⑭Oil Lubrication Groove ⑮Output Shaft Assembly



Pump model	Capacity (m ³ /h)	Head (m)	Speed (RPM)	Temperature (°C)	Motor Power(kW)
GSB-Q1	2 to 60	80 to 600	UP to 9500	-130 to 260	UP to 45
GSB-Q2	2 to 90	80 to 600	UP to 9500	-130 to 260	UP to 110
GSB-Q3	3 to 90	300 to 1000	UP to 15000	-130 to 260	UP to 132
GSB-Q4	6 to 90	500 to 1500	UP to 19600	-130 to 260	UP to 315
GSB-Q5	90 to 200	300 to 900	UP to 9600	-130 to 260	UP to 630
GSB-Q6	12 to 200	600 to 2000	UP to 23300	-130 to 260	UP to 630



▲ Shandong Baoshun Petrochemical Co.,Ltd
Water Injection Pump
Flow: 23m³/h
Head: 1780m
Motor power: 355 kW

▲ Fujian Refining & Petrochemical Co., Ltd
Propylene Pump
Flow: 171m³/h
Head: 580m
Motor power: 250 kW

▲ CNOOC Ningbo Daxie Petrochemical Co.,Ltd.
Mv Boiler Water Feed Pump
Flow : 82.5m³/h
Head: 560m
Motor power: 250 kW

▲ SHANXI YANCHANG PETROLEU (GROUP) CORP. LTD
Water Injection Pump
Flow : 12m³/h
Head: 820m
Motor power: 110 kW

▲ CNOOC SHELL HUIZHOU REFINERY
Flush Oil Pump
Flow : 15m³/h
Head: 175m
Motor power: 37 kW

▲ IRAN LORDEGAN UREA FERTILIZER PROJECT
Ammonia Recovery Feed Pumps
Flow : 15m³/h
Head: 1250m
Motor power: 220 kW

▲ CNOOC NINGBO DAXIE REFINERY
Feed Hydro-treating Unit
Water Injection Pump

Flow: 65m³/h
Head: 1682
GSB-S-65/1682
Motor power: 630 kW

TIANDE PUMP

- Leader in API 610 high-speed pump Technology
- TIANDE Pump combines nearly 30 years of experience in API610 high-speed pump development and manufacturing with a deep commitment to meeting the needs of our customers
- Our detailed process and application knowledge has allowed us to develop innovative pumping solutions of API 610 high-speed pump
- Today the company is recognized for the quality and reliability of its over 11,000 sets of high-speed pumps installed worldwide.
- TIANDE Pump has sales and service facilities in all the major markets to provide fast and flexible response and support.

Extensive Services and Product Range

TIANDE Pump provide innovative high-speed pump pumping solutions to business partners in the following industries:

- Oil & Gas
- Refinery
- Hydrocarbon Processing
- Fertilizers
- Petrochemical

All our pumps are manufactured and tested by the latest edition of API 610 to ensure reliable and safe operation at site.



Model Description:

GSB	-	L1/2/3	-	Flow	/	Head
1		2		3		4

Number signification

- 1.GSB: High-speed Pumps
2. L: Vertical 1-One stage increase speed, 2-two stage increase speed, 3-two stage increase speed for high power
3. Flow: Design point flow (m³/h)
4. Head : Design point head (m)

Standard Scope of Supply

- Pump with integrally gear box
- Main motor
- Coupling with guard
- Shaft driven lube oil pump
- Auxiliary lube oil pump with motor
- Single filter (Double filter optional)
- Lube oil pressure gauge
- Lube oil temperature gauge
- Lube oil pressure transmitter
- Water cooler(Forced air cooler with driver optional)
- Mechanical seal & system
- All necessary auxiliari pipelines
- Common skids

Optional Features

- API 614 lube oil console
- Vibration monitoring system
- Parallel arrangement
- Custom packaging
- Customized instruments and applicable system
- Sound noise enclosure



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Telephone: 86-577-68806085

Fax: 86-577-68806083

E-mail: sales@tiandepump.com

Website: http://www.tiandepump.com

TIANDE PUMP (ZHEJIANG)

Vertical, Heavy Duty, Single Stage
High Speed Integrally Gear Driven Process Pumps
GSB-L API-610 Latest Edition

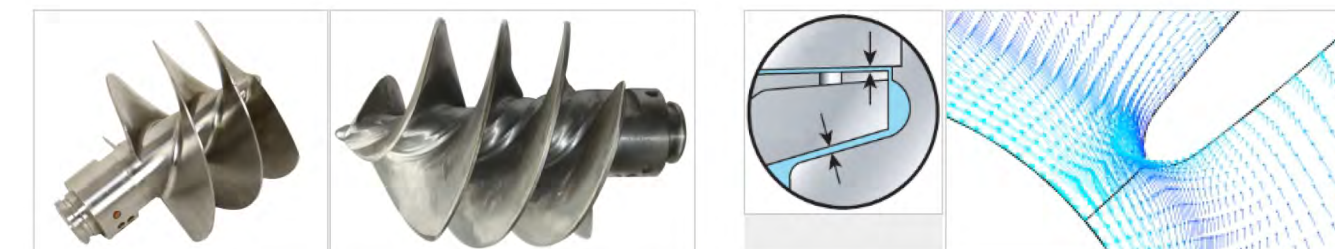


Hydraulic performance optimization



- ◆ Open, semi-open or closed impeller
- ◆ Optimized hydraulic design
- ◆ Maximized efficiency
- ◆ Minimum thrust load

Vibration and noise are reduced by Robust shaft and gear design with balancing service standard while improving reliability and increasing operating life.



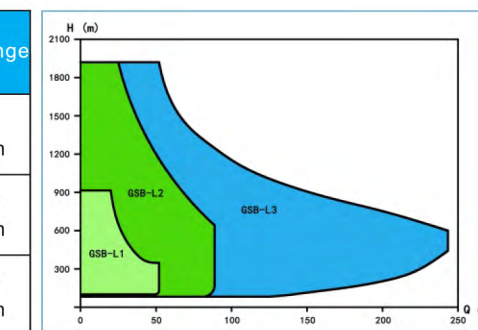
High-performance Inducers for superior NPSHr

Customized hydraulic design to match customer application

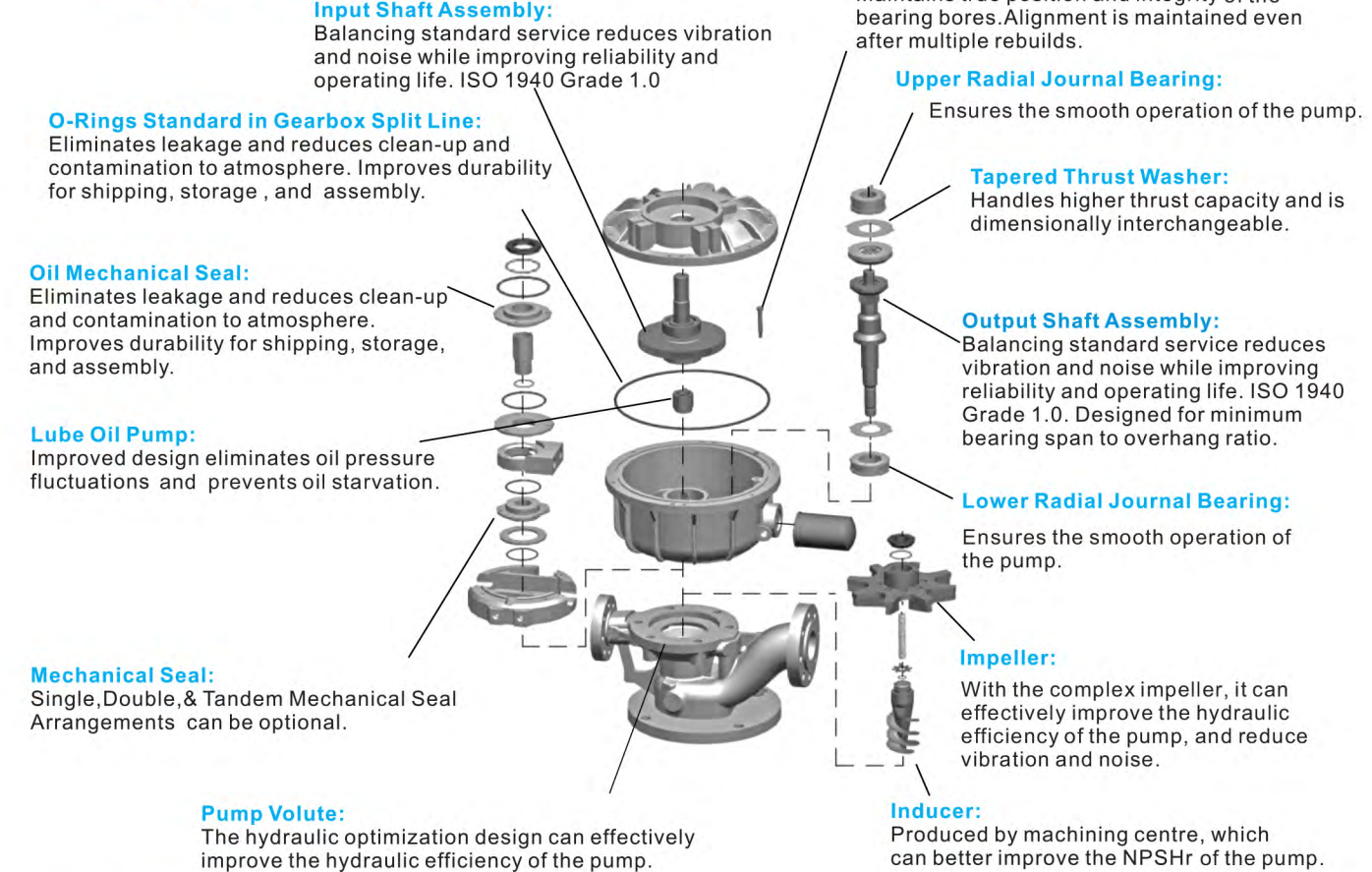


Performance Specification

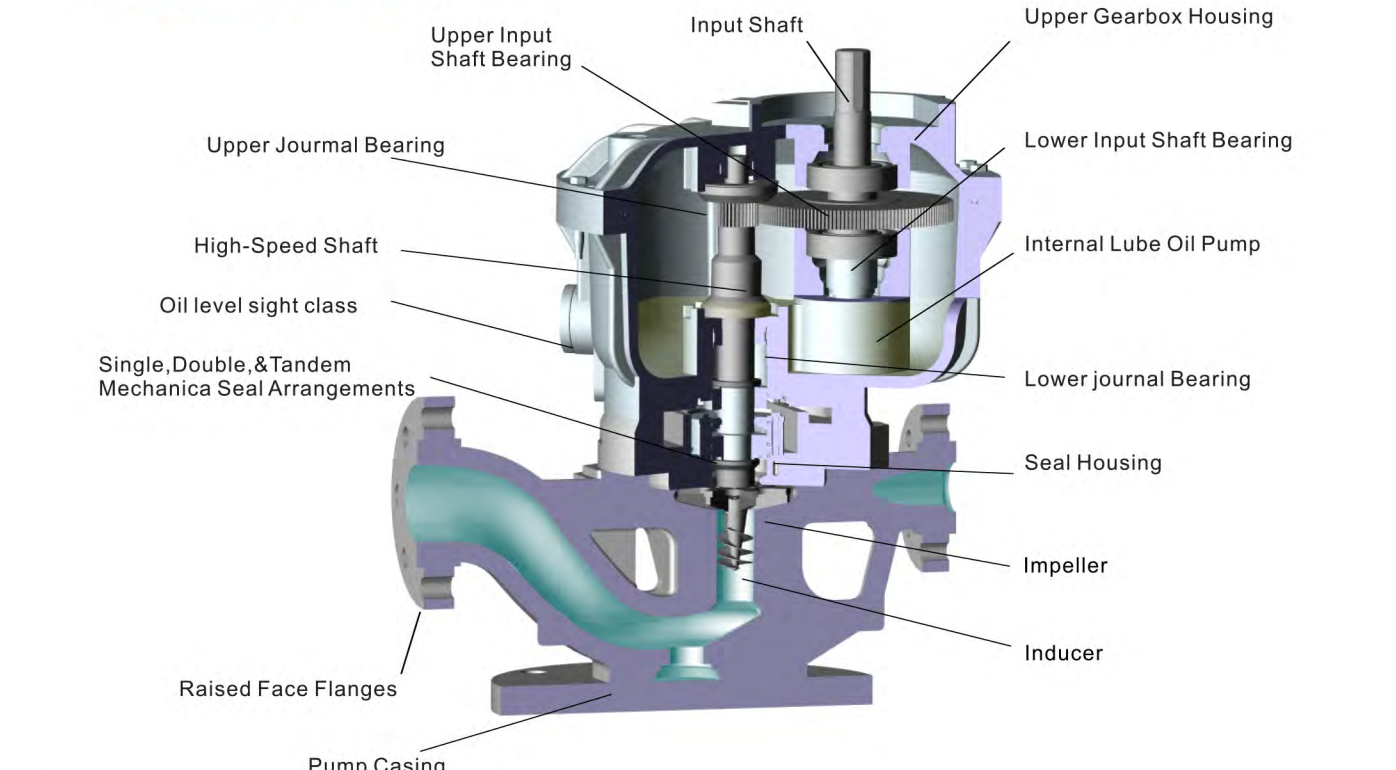
	Flow Range	Head Range	Motor power	Operating Temperature	Velocity Range
GSB-L1 Series	5m³/h~52m³/h	70m~920m	5.5kW~37kW	-130°C~340°C	4800rpm 14200rpm
GSB-L2 Series	5m³/h~90m³/h	250m~1220m	37kW~160kW	-130°C~340°C	7850rpm 22700rpm
GSB-L3 Series	10m³/h 227m³/h	500m~1980m	132kW 315kW	-130°C~340°C	7850rpm 22700rpm



» GSB-L1 Design Feature

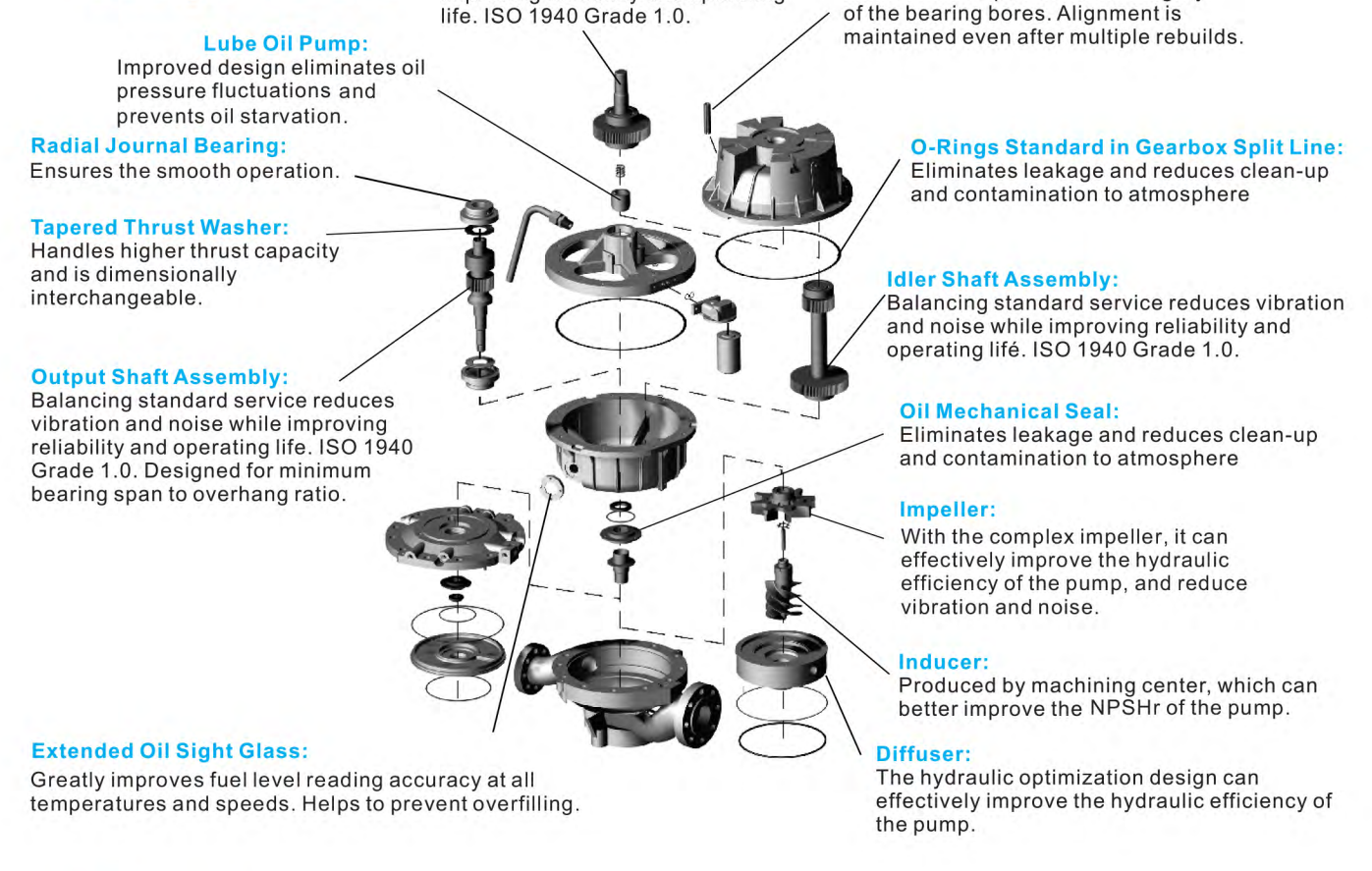


» GSB-L1 Cross Sectional

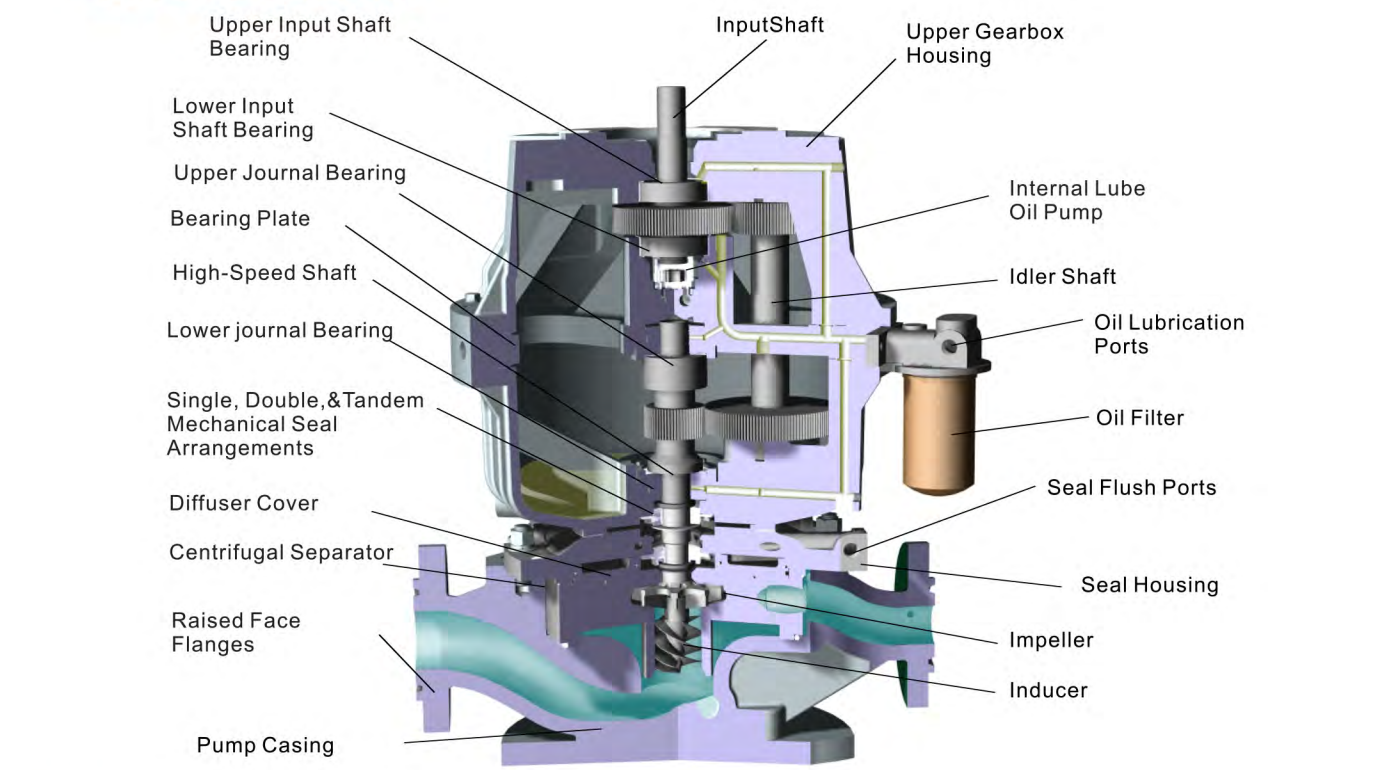


Materials
All common API 610 Material Classes like S-5, S-6, S-8, C-6, A-7, A-8, D-1, D-2. Other material combinations are readily available like alloy 20, Titanium ...

» GSB-L2 Design Feature

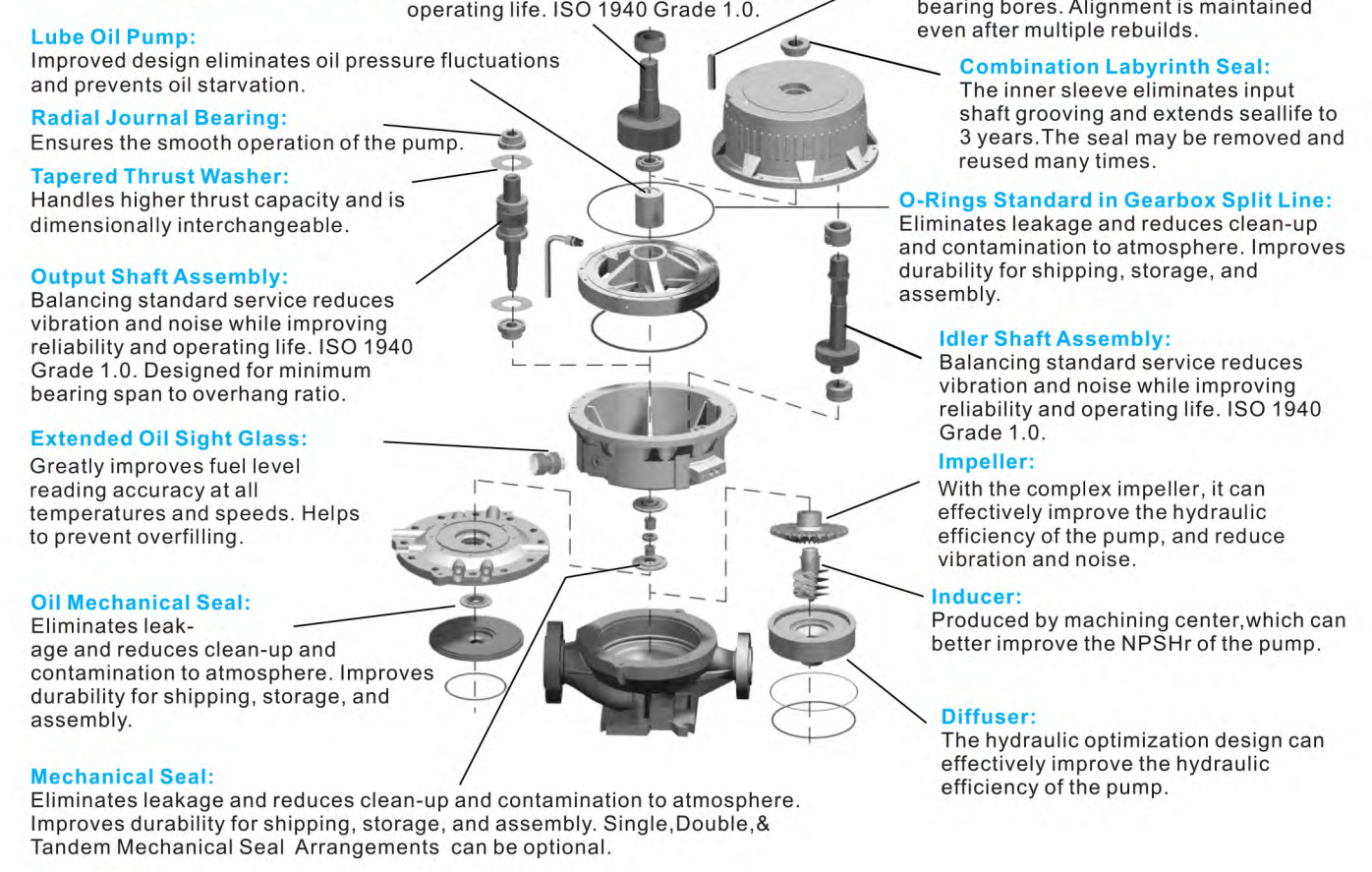


» GSB-L2 Cross Sectional

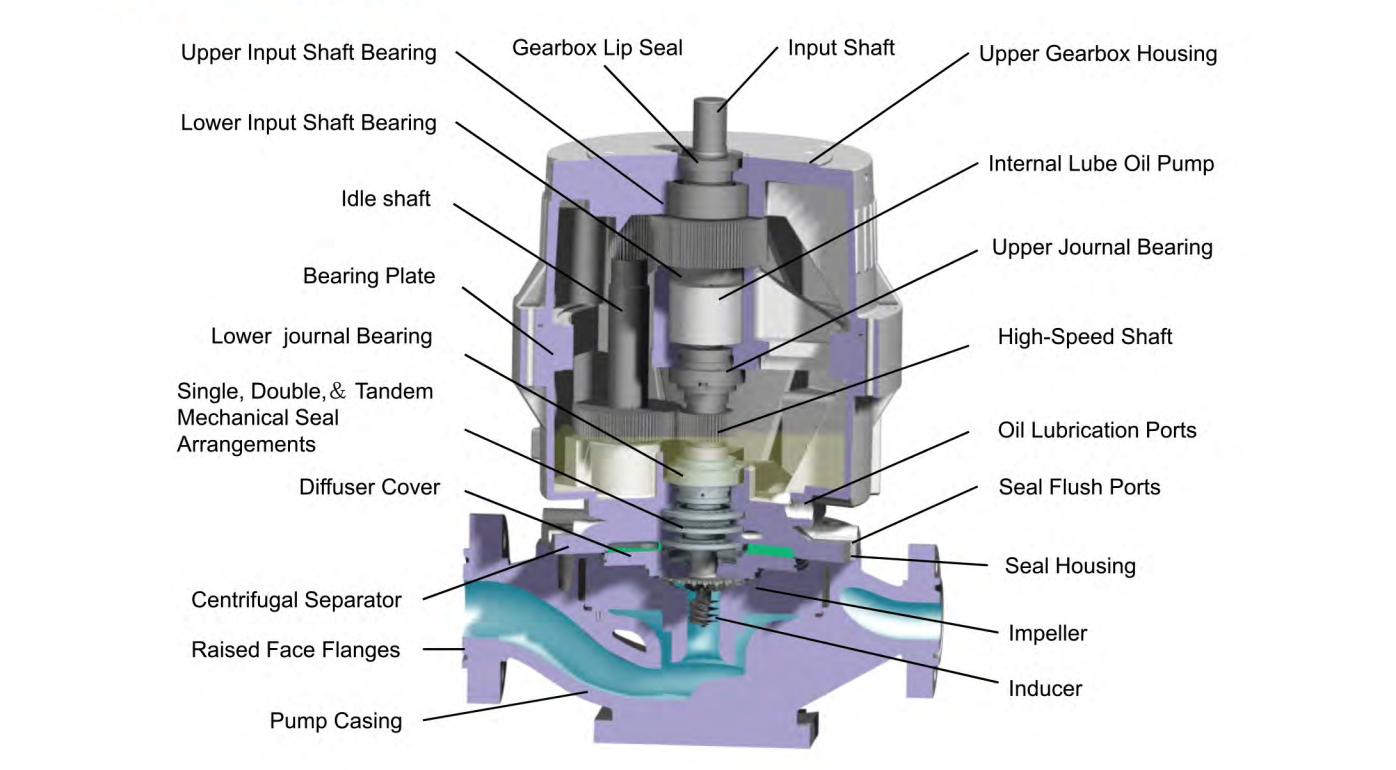


Materials
All common API 610 Material Classes like S-5, S-6, S-8, C-6, A-7, A-8, D-1, D-2. Other material combinations are readily available like alloy 20, Titanium ...

» GSB-L3 Design Feature



» GSB-L3 Cross Sectional



Materials
All common API 610 Material Classes like S-5, S-6, S-8, C-6, A-7, A-8, D-1, D-2. Other material combinations are readily available like alloy 20, Titanium ...



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Water Injection Pump
Flow : 12m³/h
Head: 820m
Motor power: 110kW



▲ CNOOC SHELL HUIZHOU REFINERY
Flush Oil Pump
Flow : 31m³/h
Head: 175m
Motor power: 37kW



▲ CNPC LUOYANG REFINERY
PTA Feed Pump
Flow : 52m³/h
Head: 1072m
Motor power: 315kW



▲ CNPC DUSHANZI PETROCHEMICAL COMPANY
Ethylene Feed Pump
Flow : 51.5m³/h
Head: 615m
Motor power: 132 kW



▲ CNPC WULUMUQI PETROCHEMICAL COMPANY
Low Pressure Feed Pump
Flow : 32m³/h
Head: 300m
Motor power: 55 kW



▲ SINOPEC YANSHAN PETROCHEMICAL CO.,LTD
C4 Feed Pump
Flow : 22m³/h
Head: 646m
Motor power: 75 kW



» IRAN LORDEGAN UREA FERTILIZER PROJECT

	GSB-L1	GSB-L2	GSB-L3
Flow (m ³ /h)	9	20	15
Head(m)	153	405	1250
Motor power(kW)	18.5	90	220