

### Model Description:

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

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

Force lubrication

Vertical high-speed integral gear pump

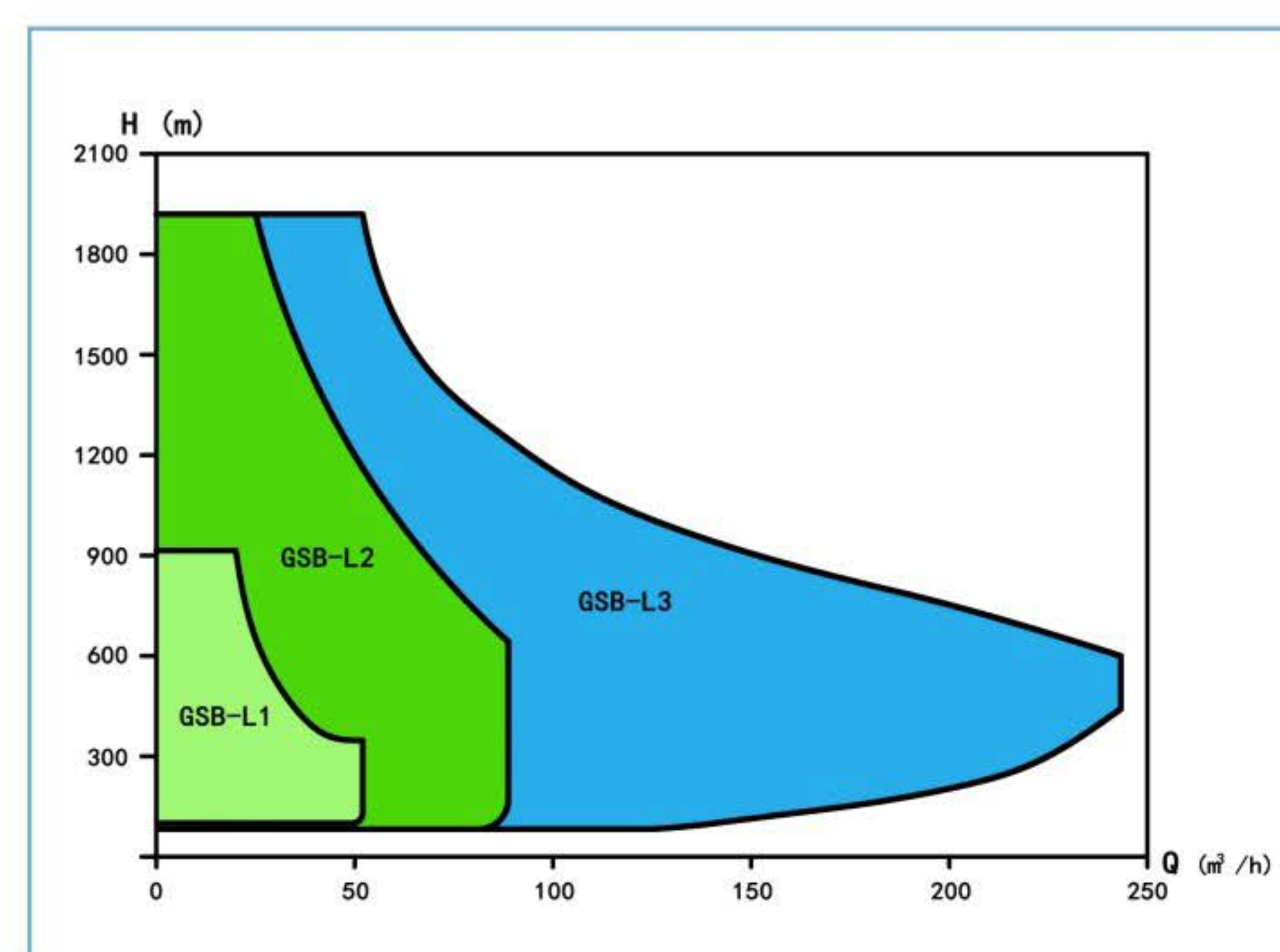
The pumps use single-stage or two stage gear speed increase.

Inlet and outlet flanges of the pump body form the symmetry 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

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



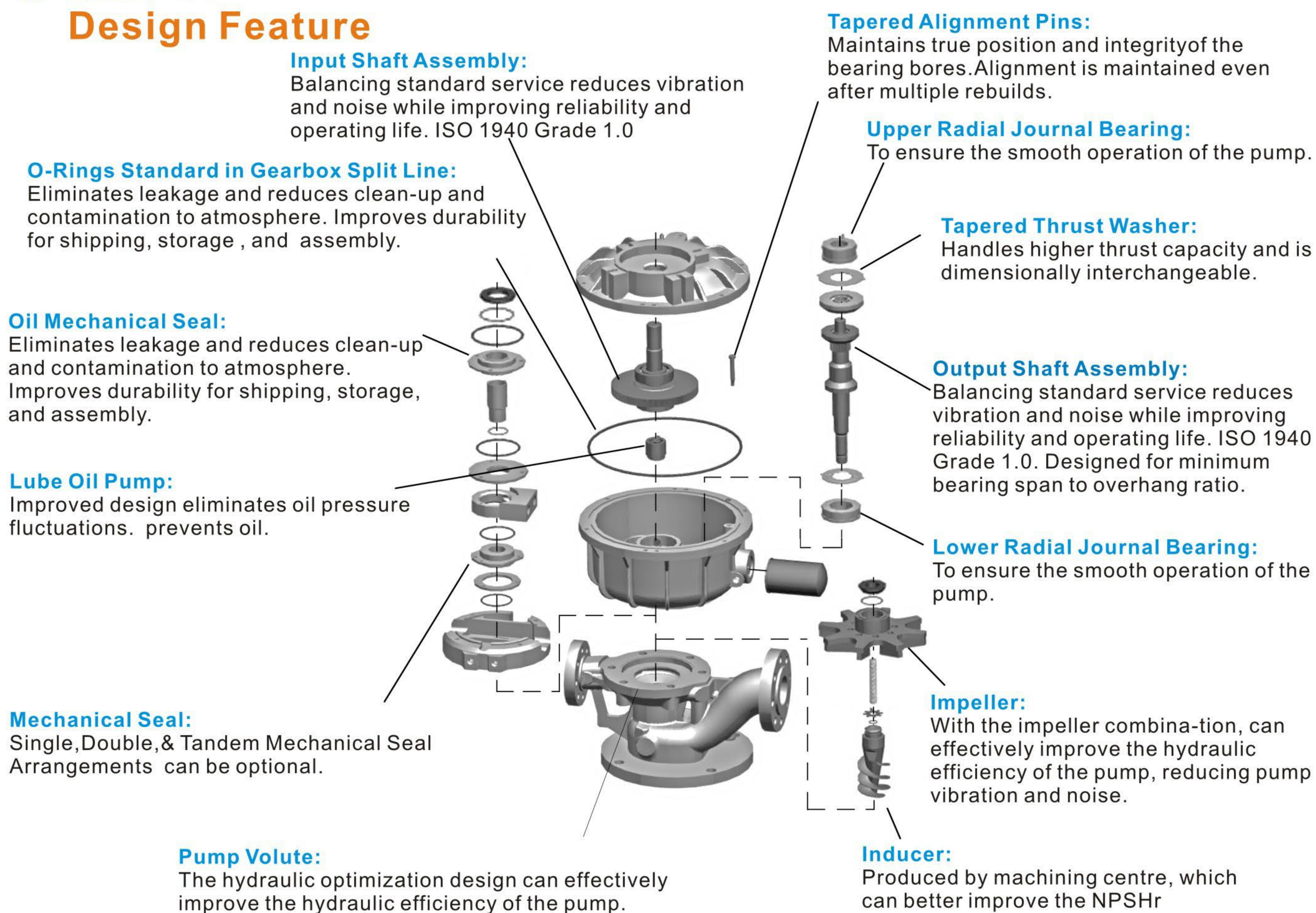
▲ **SHANXI YANCHANG PETROLEU (GROUP) CORP. LTD**  
Water Injection Pump  
Flow : 12m<sup>3</sup>/h  
Head: 820m  
Motor power: 110kw

▲ **CNOOC SHELL HUIZHOU REFINERY**  
Flush Oil Pump  
Flow : 31m<sup>3</sup>/h  
Head: 175m  
Motor power: 37kw

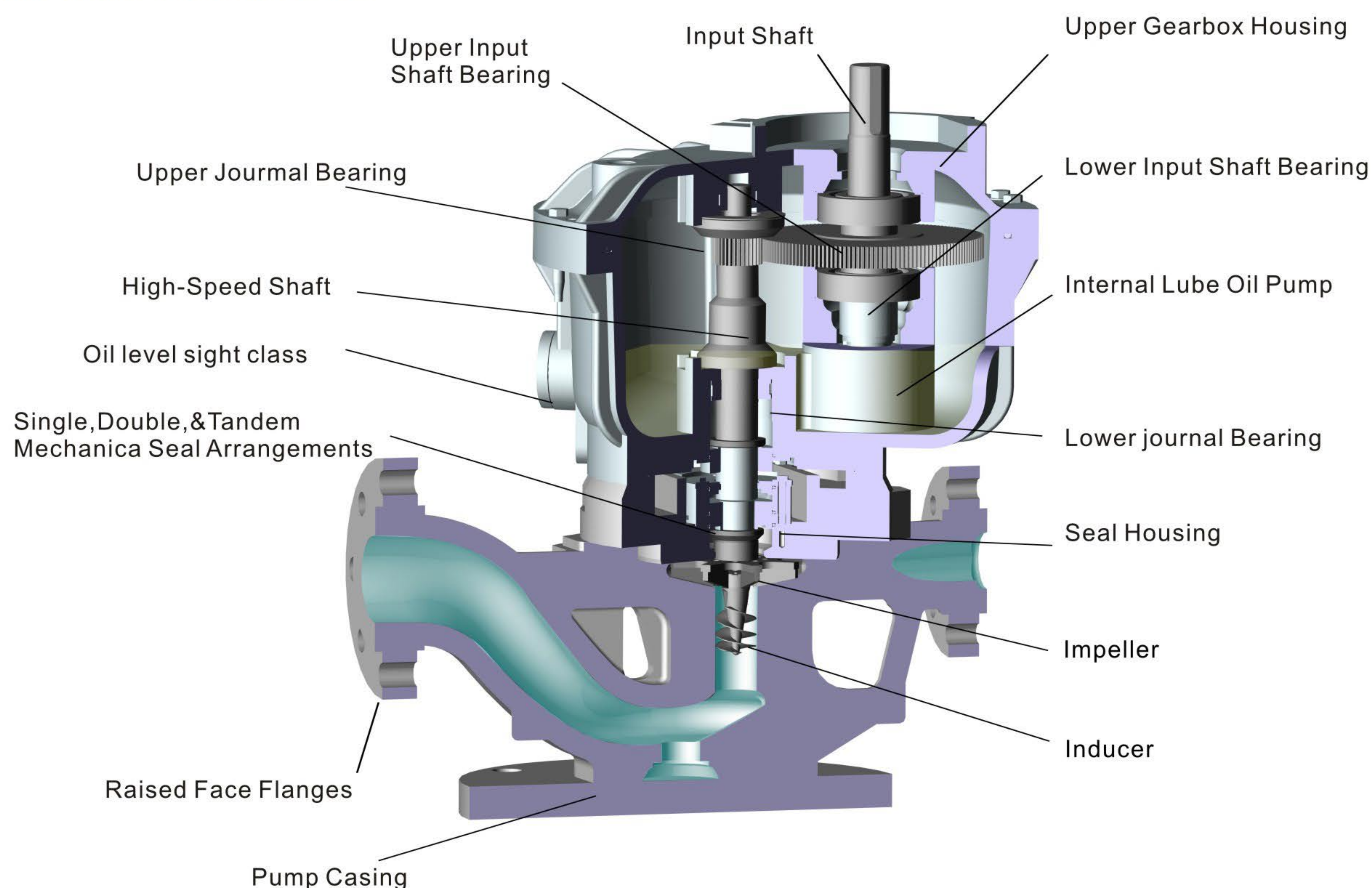
▲ **CNPC LUOYANG REFINERY**  
PTA Feed Pump  
Flow : 52m<sup>3</sup>/h  
Head: 1072m  
Motor power: 315kw



## GSB-L1 Design Feature



## GSB-L1 Cross Sectional

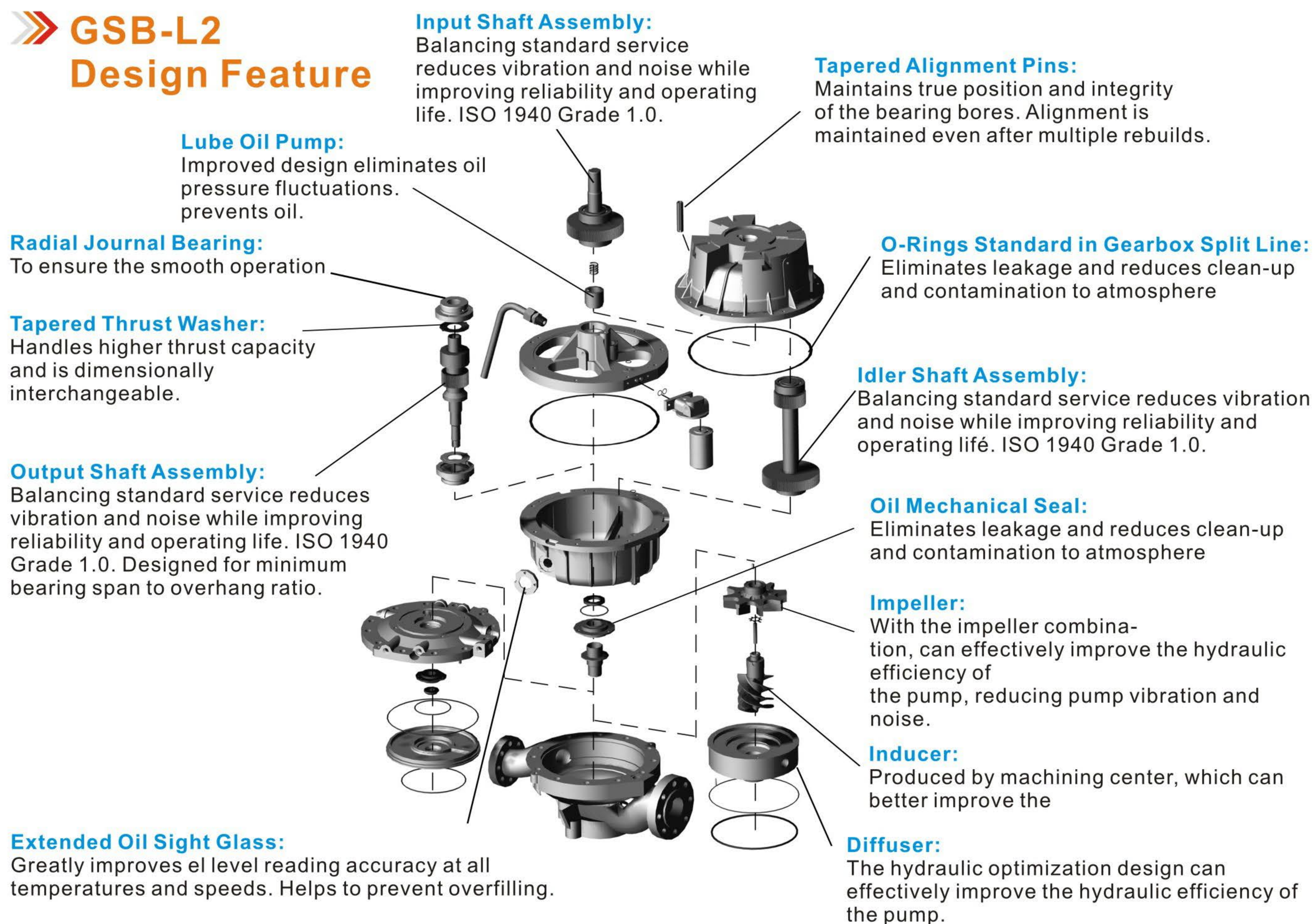


### Materials

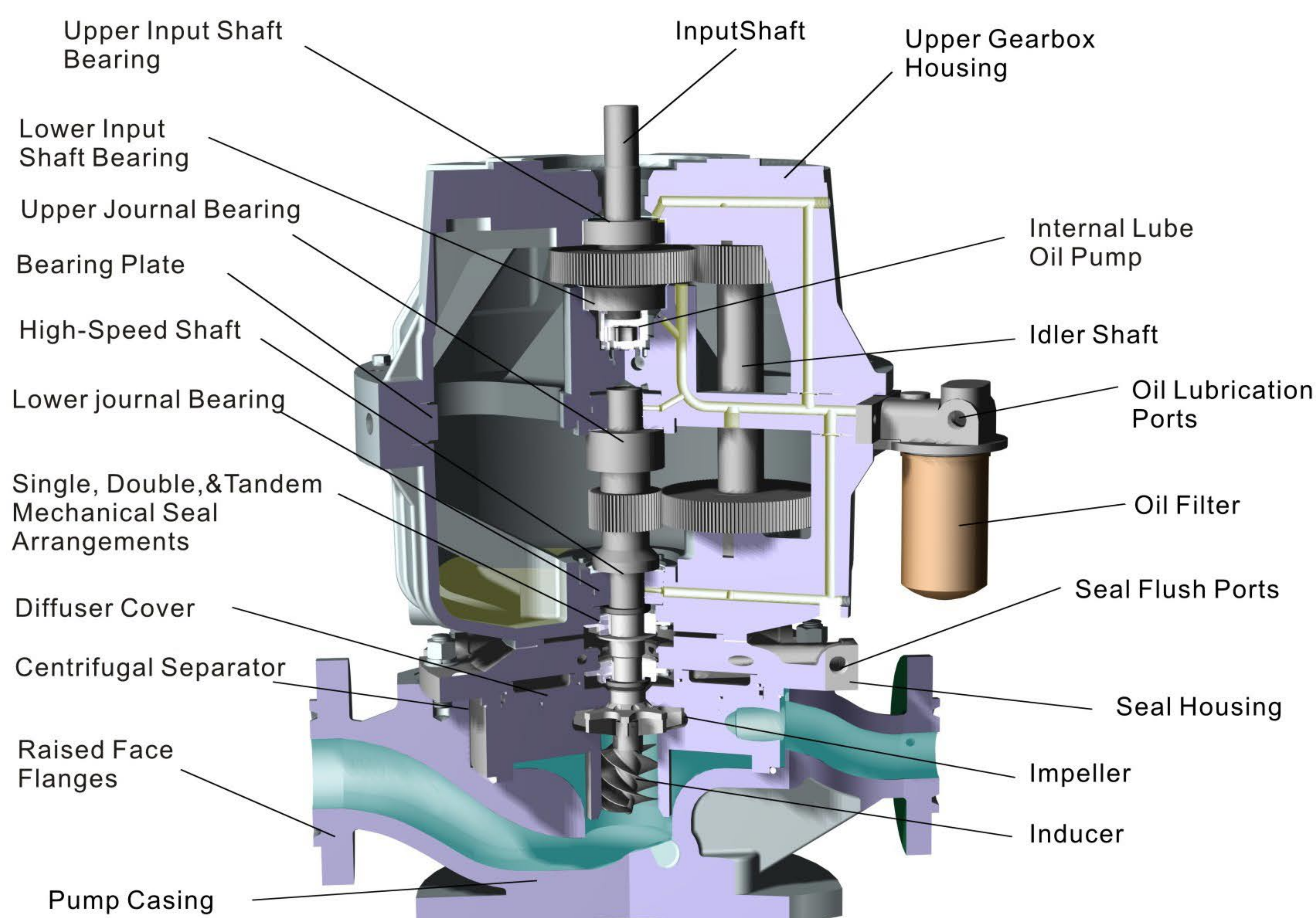
All common API 610 Material Classes like S-5, S-6, S-8, C-6, A-7, A-8, D-1, D-2. Other material combinations are readily available like alloy 20, Titanium ...



## » 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

### Lube Oil Pump:

Improved design eliminates oil pressure fluctuations. prevents oil.

### Radial Journal Bearing:

To ensure the smooth operation of the pump.

### Tapered Thrust Washer:

Handles higher thrust capacity and is dimensionally interchangeable.

### Output Shaft Assembly:

Balancing standard service reduces vibration and noise while improving reliability and operating life. ISO 1940 Grade 1.0. Designed for minimum bearing span to overhang ratio.

### Extended Oil Sight Glass:

Greatly improves oil level reading accuracy at all temperatures and speeds. Helps to prevent overfilling.

### Oil Mechanical Seal:

Eliminates leakage and reduces clean-up and contamination to atmosphere. Improves durability for shipping, storage, and assembly.

### Mechanical Seal:

Eliminates leakage and reduces clean-up and contamination to atmosphere. Improves durability for shipping, storage, and assembly. Single, Double, & Tandem Mechanical Seal Arrangements can be optional.

### Input Shaft Assembly:

Balancing standard service reduces vibration and noise while improving reliability and operating life. ISO 1940 Grade 1.0.

### Tapered Alignment Pins:

Maintains true position and integrity of the bearing bores. Alignment is maintained even after multiple rebuilds

### Combination Labyrinth Seal:

The inner sleeve eliminates input shaft grooving and extends seal life to 3 years. The seal may be removed and reused many times.

### O-Rings Standard in Gearbox Split Line:

Eliminates leakage and reduces clean-up and contamination to atmosphere. Improves durability for shipping, storage, and assembly.

### Idler Shaft Assembly:

Balancing standard service reduces vibration and noise while improving reliability and operating life. ISO 1940 Grade 1.0.

### Impeller:

With the impeller combination, can effectively improve the hydraulic efficiency of the pump, reducing pump vibration and noise.

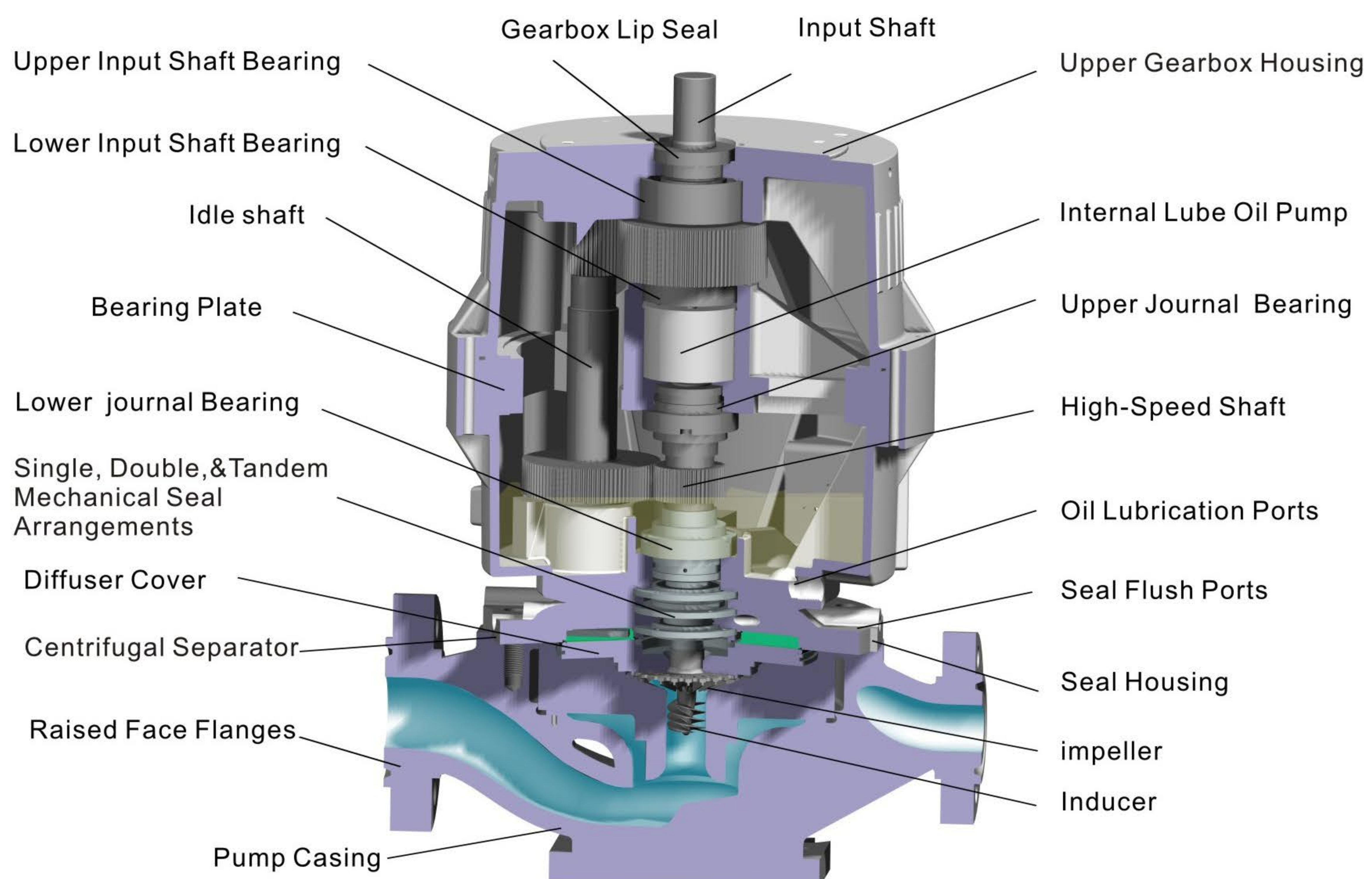
### Inducer:

Produced by machining center, which can better improve the NPSHr of the pump.

### Diffuser:

The hydraulic optimization design can effectively improve the hydraulic efficiency of the pump.

## » 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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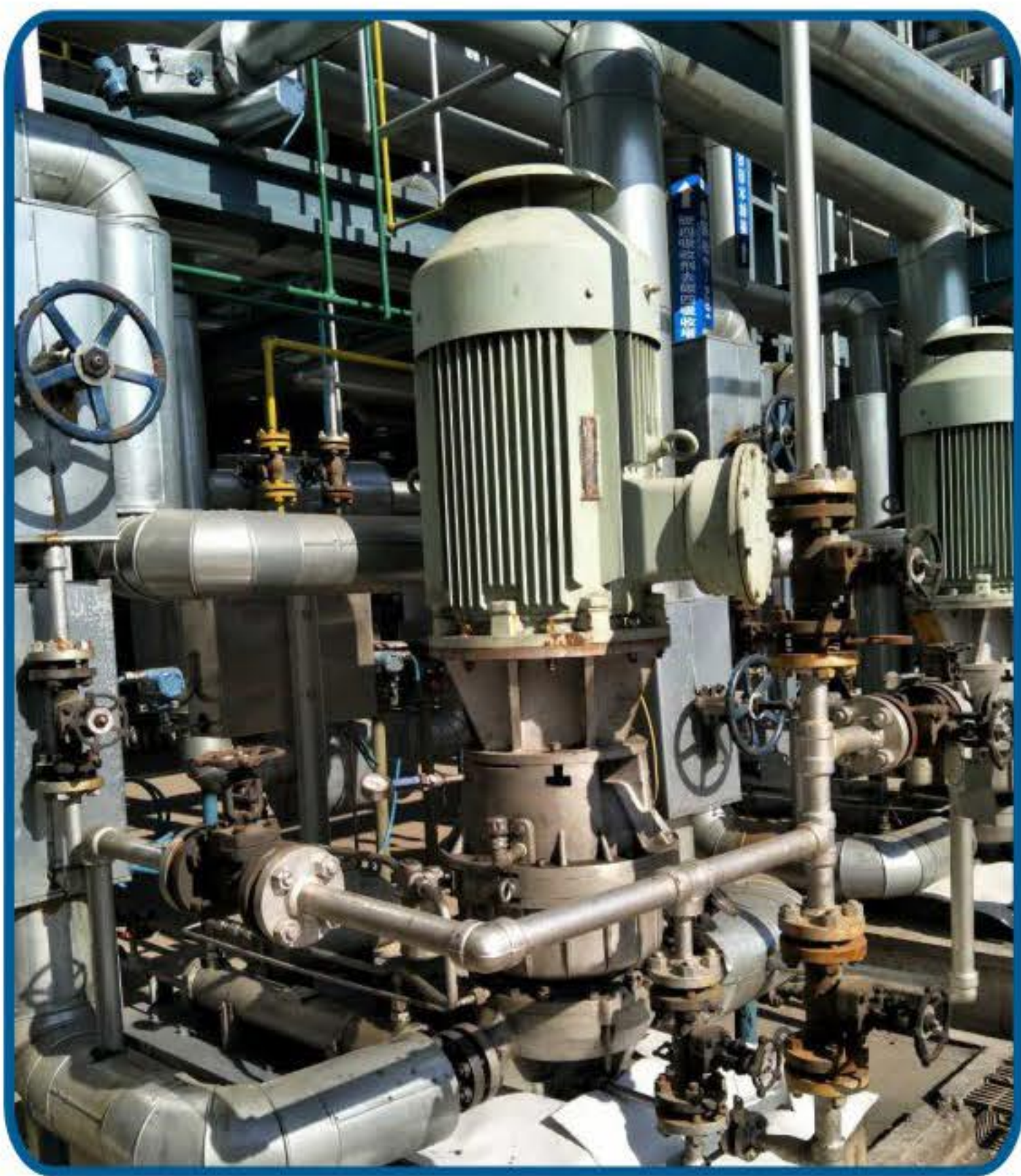
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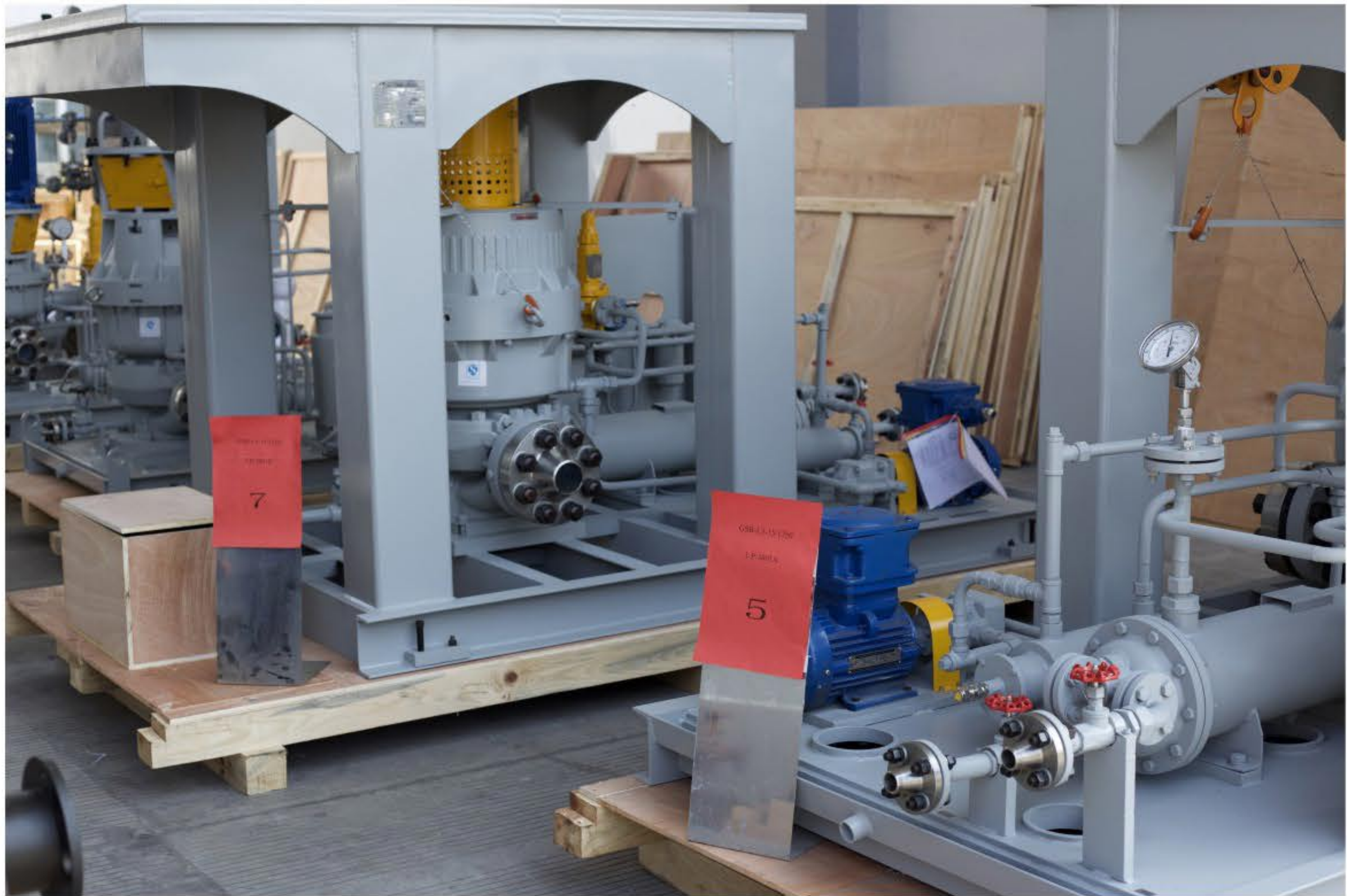
▲ CNPC DUSHANZI  
PETROCHEMICAL COMPANY  
Ethylene Feed Pump  
Flow : 51.5m<sup>3</sup>/h  
Head: 615m  
Motor power: 132kw



▲ CNPC WULUMUQI  
PETROCHEMICAL COMPANY  
Low Pressure Feed Pump  
Flow : 32m<sup>3</sup>/h  
Head: 300m  
Motor power: 55kw



▲ SINOPEC YANSHAN  
PETROCHEMICAL CO.,LTD  
C4 Feed Pump  
Flow : 22m<sup>3</sup>/h  
Head: 646m  
Motor power: 75kw



IRAN LORDEGAN UREA  
FERTILIZER PROJECT

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