

PRODUCT SELECTION REPORT

Model:LPP80-20-5.5/2
Name: Vertical In-Line Pump



LEO GROUP PUMP CO.,LTD.

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Company Name:

ONIS

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Company Name:

Product Model:

LPP80-20-5.5/2
LEO GROUP PUMP CO., LTD.

Product Recommendations

Flow(m³/h): 70 Head(m): 20 Power(kW): 5.5

Based on provided information and product parameters, LEO PUMP recommends model:
LPP80-20-5.5/2

Introduction

Product Description:

- This series of products are vertical single-stage pipeline centrifugal pumps
- Standard configuration: mechanical seal, standard motor
- The pump is a top pull-out design. During routine maintenance, the pump head (motor base and impeller) can be removed, Maintenance and overhaul without dismantling the pump body and piping on both sides
- The impeller optimizes the hydraulic design through the CFD fluid simulation analysis technology, and the hydraulic efficiency is higher
- The impeller adopts a double-port ring balance structure, which has less axial force and longer bearing life
- The shape is designed by the Italian professional shape team, the most advanced modular design concept
- The surface of the whole machine adopts the electrophoretic coating process, and the anti-corrosion effect is better

Scope of Application:

- Liquid temperature: 0°C~+90°C
- Max. ambient temperature: + 40°C
- Highest altitude: 1000m
- Max. working pressure: 10bar / 16bar

Motor:

- Fully enclosed air-cooled standard motor
- Class F insulation, protection class IP55, safer operation and less noise Equipped with a variety of power motors from 0.37kW to 200kW, users can choose the corresponding water pump according to different technical requirements to meet different system requirements.

Liquid Requirements:

Clean, thin, non-aggressive, non-flammable, explosive, and gas-free liquid that does not contain solid particles (particle size ≤ 0.2mm) and fibers, and the liquid cannot react chemically to the pump material.

Example of pumped liquid:

- The water quality in the heating system should meet the recognized water quality standards for the system
- Cooling system
- Domestic hot water system
- Industrial liquid
- Softened water

If the density or kinematic viscosity of the liquid being pumped is higher than that of water, it will cause:

- Stress is significantly reduced
- Decreased hydraulic properties
- Increased energy consumption

In these cases, a larger motor should be used

If the water contains mineral oil or chemicals, or if conveying other liquids than water, select the appropriate O-ring.

LPP Pumps Can Be Used In The Following Systems:

- Heating system: Heating cycle, boiler mixed flow, temperature mixed flow, intermittent heating, waste gas heat recovery, hybrid loop, domestic hot water circulation
- Air conditioning system: chilled cooling water circulation
- Water supply system: filtration and transportation, pipeline pressurization
- Industrial production: flushing and cleaning systems, boiler feed water, cooling water circulation, water treatment systems, equipment supporting systems
- Fire Fighting System

Minimum Inlet Pressure - NPSH

It is recommended to calculate the inlet pressure "H" when the following conditions exist:

- High liquid temperature
- The flow is significantly greater than the rated flow
- Pump water from low
- Pumping water from long pipes
- Poor import conditions

To avoid cavitation, it is necessary to ensure a minimum pressure on the inlet side of the pump. The maximum suction height "H" can be calculated as follows:

- $H = P_b \times 10.2 - NPSH - H_f - H_v - H_s$

- P_b is atmospheric pressure in bar

(Can be set to 1bar, in closed system, P_b is system pressure)

- NPSH is the net positive suction head of the pump in m; the corresponding value at maximum flow can be read in the graph

- H_f is the suction line resistance loss in m (at the maximum flow of the pump)

- H_v is the vaporization pressure in m (can be read from the vaporization pressure gauge. Its value depends on the liquid temperature t_m)

- H_s is the minimum safety margin of 0.5m

If the calculated "H" is positive, the pump can operate at a maximum suction height of "H"

If the calculated "H" is negative, the pump requires a minimum "H" inlet pressure

Product Parameters

Nameplate

Pump flow rate(m ³ /h):	70	Total manometric head H(m):	20
Pump efficiency(%):	78.5	Speed(rpm):	2900

Technical

Motor power(kW):	5.5	Shaft Power(kW):	5.05
Curve tolerance:	ISO9906 AnnexA	Maximum lift(m):	25
Maximum use flow(m ³ /h):	90	Impeller diameter(mm):	138

Material

Impeller:	HT200	Pump body:	HT200
Pump shaft:	AISI304+45	Mechanical seal:	SiC/C
O-ring:	NBR		

Working conditions

Max. ambient temperature(°C):	40	Max. liquid temperature(°C):	90
Max. Operating Pressure:	16bar		
Pumped medium:	Thin, clean, non corrosive, non flammable and explosive liquid without solid particles and fibers		

Installation

Inlet&Outlet Diameter:	DN80		
Connection standard:		DIN Flange connection	

Motor

Motor phase:	Three phase	Protection class:	IP55
Motor poles:	2	Insulation class:	F
Motor power(kW) :	5.5	Frequency(Hz):	50
Rated voltage(V):	380	Rated current(A):	10.65
Efficiency class:	IE2	Power factor:	0.88
Drive end bearing:	7308	Non-drive end bearing:	6306
Efficiency(%):	89.2	Starting current(A):	109

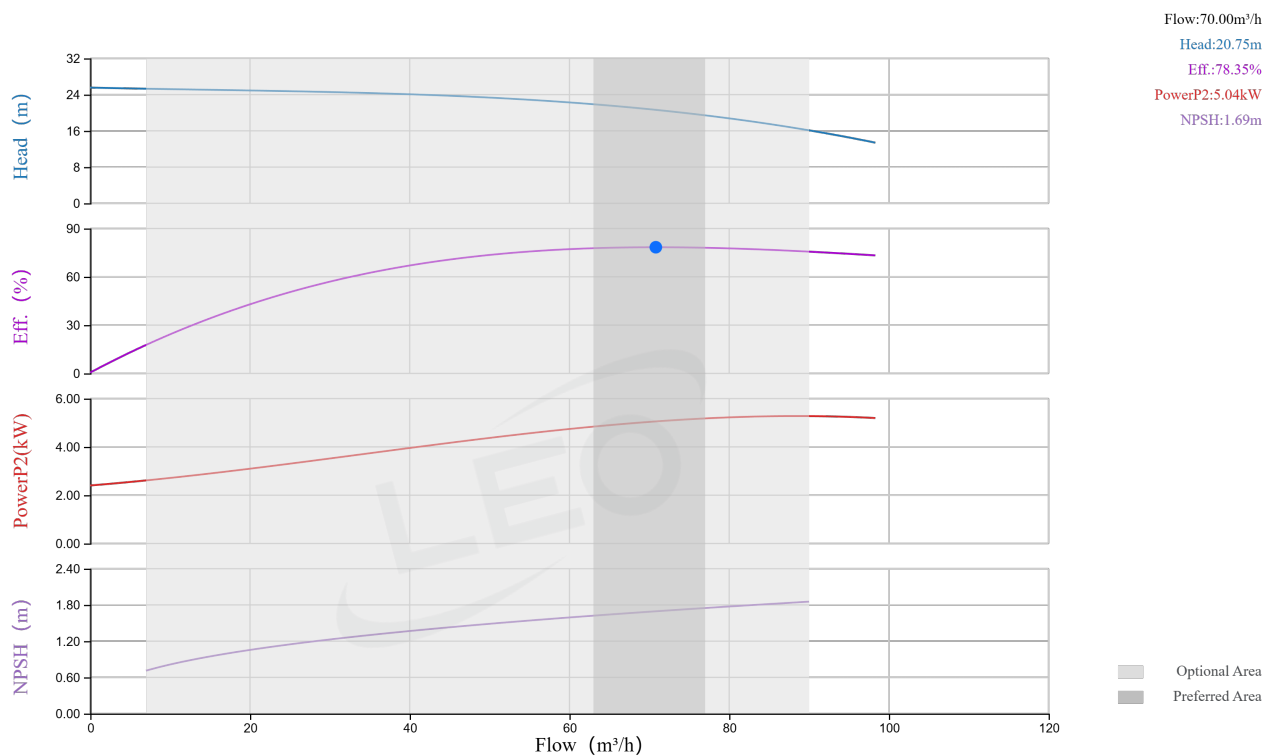
Weight/Packaging

Gross weight(kg):	108.9	Package size(mm):	795*490*430
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Area Range Parameters

Max Q(m ³ /h):	90.0	Allowable Minimum (m ³ /h):	7.0
Allowable Maximum (m ³ /h):	90.0	Min Value Optimal area (m ³ /h):	63.0
Max Value Optimal area (m ³ /h):	77.0		

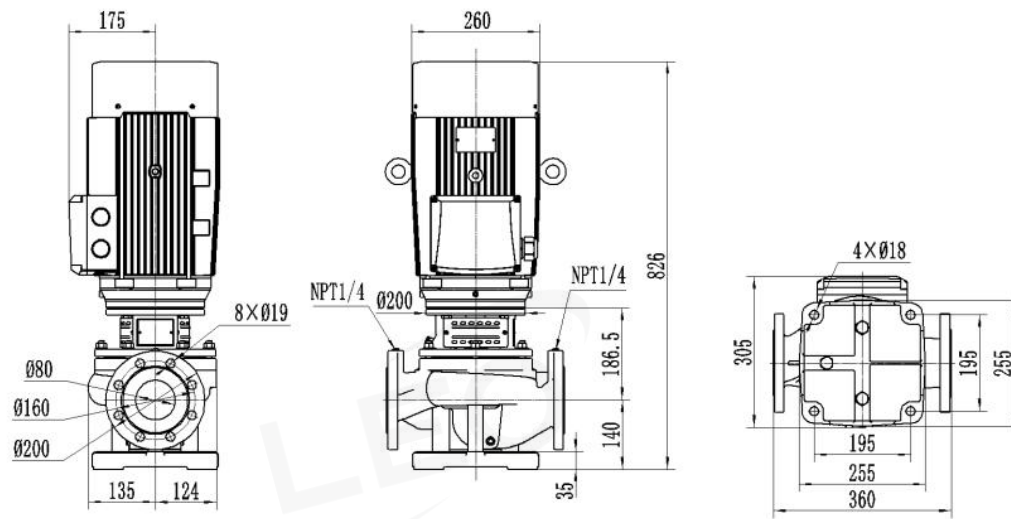
Performance Curve



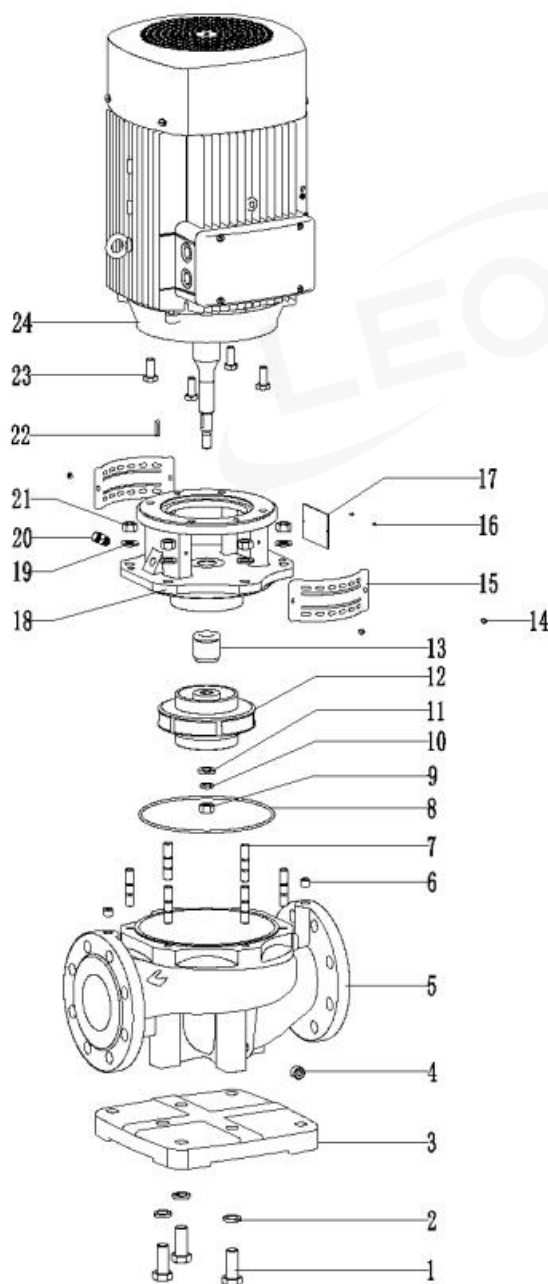
Basic Parameters

	Pump flow rate(m³/h)	Total manometric head H(m)	Pump efficiency(%)	Shaft power (kW)	NPSHr(m)
Rated Point	70.00	20.00	78.5	5.05	1.69
Work Point	70.00	20.75	78.35	5.04	1.69
Minimum Allowed Point	7.00	25.30	17.70	2.61	0.71
Maximum Allowed Point	90.00	16.12	75.61	5.27	1.85
Optimal Working Area (Small)	63.00	21.88	77.75	4.83	1.62
Optimal Working Area (Large)	77.00	19.42	78.02	5.17	1.75

Shape & Size



Exploded View



24	Motor	
23	Hex head bolt	
22	Key	304
21	Hex nut	
20	Release valve	HPb59-1
19	Washer	
18	Motor frame	HT200
17	Rivet	
16	Nameplate	
15	Guard plate	304
14	Screw	
13	Mechanical seal	SiC/C
12	Impeller	HT200
11	Washer	304
10	Spring washer	304
9	Hex nut	304
8	O-ring	NBR
7	Double-head stud A type	
6	Hexagonal socket head plug	
5	Pump body	HT200
4	Hexagonal socket head plug	
3	Baseplate	HT200
2	Spring washer	
1	Hex head bolt	
No.	Part	Material