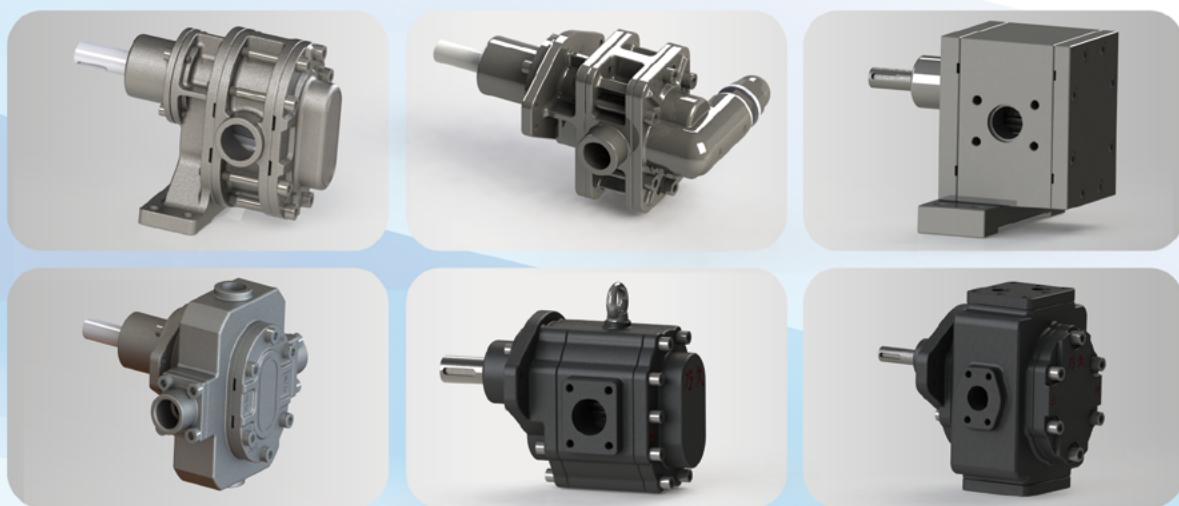


COMPREHENSIVE CATALOG OF CHEMICAL GEAR PUMP

化工齿轮泵综合样本



JINAN RUNWAY AUTOMATION

» 济南润伟自动化有限公司



COMPANY INTRODUCTION



Jinan Runway Automation Co., Ltd. was established in 2018. It is the foreign trade sales company of Shandong Shijing Machinery and focuses on developing the international fluid transportation market. The high-precision helical gear metering pumps and ultra-quiet hydraulic gear pumps we research and produce are in a leading position in technology. We also produce and sell fluid accessories, helping related companies to upgrade industrial fluid transportation technology, improve production efficiency, save energy and reduce emissions, and are widely praised by various companies.

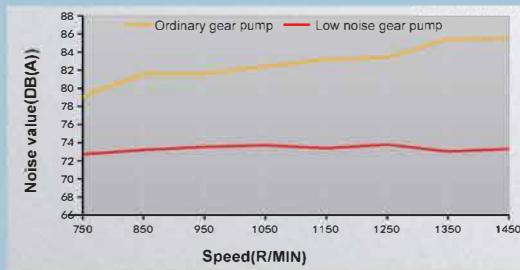
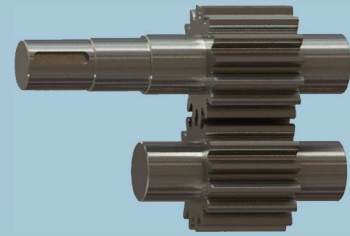
We are rooted in the field of transmission industry that we love, focus on the business philosophy of benign and sustainable development, and build a professional sales team and technical team to serve customers. Provide customers with feasible streaming media control and mechanical transmission solutions.

Our corporate purpose is "Pursue innovation, quality first, be rigorous and realistic, and unite and advance."

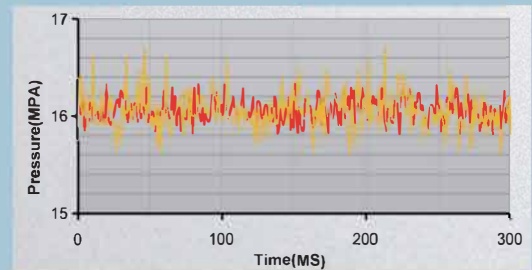


Advantages of spiral gear metering pumps

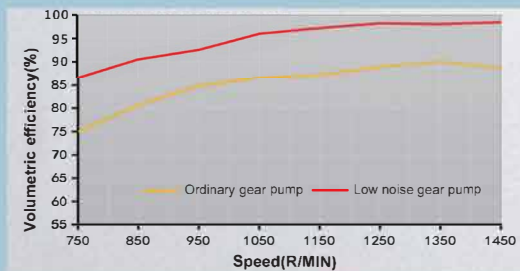
1. Noise reduction of 5-13 decibels
2. Pulse reduction by 70%
3. Increase volumetric efficiency by 5-8%
4. Broader scope of application



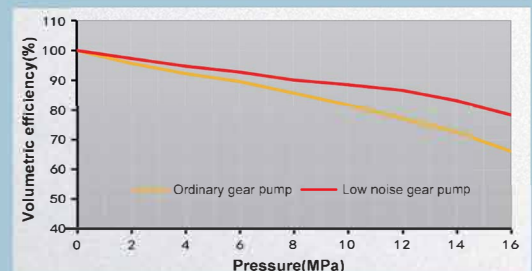
Red is helical gear pump data



Rated pressure pulse curve



Yellow is spur gear pump data



Volumetric efficiency comparison curve at rated speed and different pressures

Volumetric efficiency comparison curve at rated pressure and different speeds

Model-level material description

Example: $\frac{H}{1} \frac{Z}{2} \frac{B}{3} \frac{10}{4} / \frac{V}{5} / \frac{QT}{6} / \frac{Cr}{7} / \frac{PK}{8} / \frac{Cu}{9}$

1. **Main structure series:** H represents chemical high-speed pump series, Y represents hydraulic pump series.
2. **Substructure series:** Z is a cast iron chemical pump series, B is a high-speed metering pump series, and D is a high-viscosity and high-vacuum series.
3. **Substructure series:** B is a friction plate structure gear pump, D is a D-type sleeve structure gear pump, and S is a double support structure gear pump.
4. **Single-turn displacement code:** single-turn displacement 10ml/r. The general table of single-turn displacement is attached.
5. **Seal scheme code:** V is magnetic seal, J is mechanical seal, T is packing seal, F is fan seal
6. **Shell material:** QT stands for QT400, HT stands for HT200, 04 stands for SS304, 16 stands for SS316.
7. **Shaft material:** 44 represents 440C, Cr represents Cr12. Ti represents 20CrMoTi, TC represents ceramics
8. **Friction plate material:** PK stands for PEEK, C stands for impregnated graphite, CU stands for copper-based alloy, and AL stands for aluminum-based alloy. Si stands for silicon carbide
9. **Static seal material:** F4 represents perfluoroethylene, Q represents nitrile rubber, F represents fluorine rubber, M represents perfluoroether, and B represents fluorine.
10. **Sliding/rolling bearing material:** Cu represents composite copper sleeve, PK represents PEEK sleeve, G4 represents rolling bearing 440C, GT represents ceramic rolling bearing.

Typical application materials



Vitamin



Edible oil



Beverage



Laundry detergent



Shampoo



Lubricating oil



Asphalt



Paper Additives



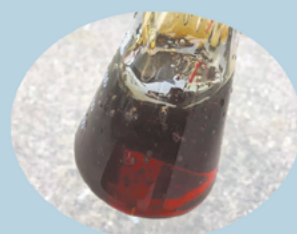
Defoamer



Dyestuff



Pesticide



Grinding aid

Health products: Vitamins, Lecithin, Polyols, Creamy Health products, Syrup.

Food and beverages: Edible oil, Milk, Fruit Juice, Cream, Honey, Chocolate.

Daily chemical products: Shampoo, Skincare Products, Shower Gel, Facial Cleanser, Toilet Cleaner, Disinfectant.

Petroleum and coal chemical industry: Crude oil, Heavy oil, Asphalt, Coal tar, Petrochemical Extracts, Lubricating oil.

Paper making: Chelating agent, Fixing agent, Dry strength agent, Defoamer, Retention aid, Stripping agent, etc.

Water treatment: Dilute hydrochloric acid, Flocculant, Defoamer, Reducing agent, and coagulant aid.

Textile printing and dyeing: Softener, Fixative, Dye, Oiling agent, Indigo, Sulfur black, Ink.

Modern agriculture: Liquid fertilizers, Pesticides, Agricultural Additives, Preservatives.

Adhesives: Resin, Silicone, Hot melt adhesive, Polyurethane adhesive, Silicone sealant, Liquid silicone rubber

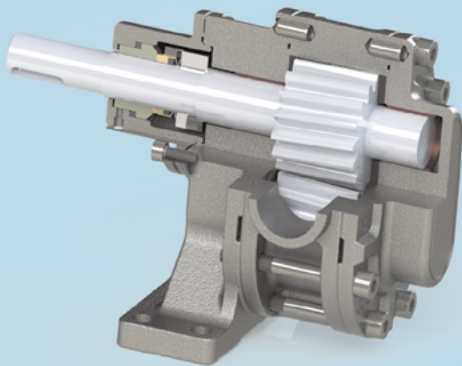
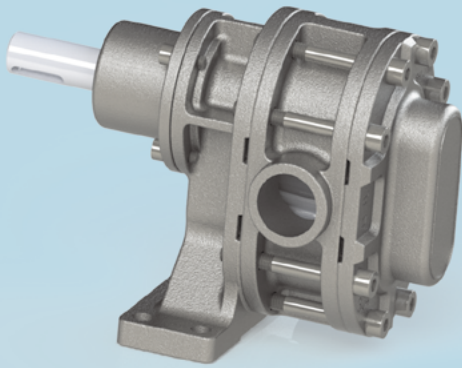
Other: Resin, Sulfonic acid, Grinding aids, Sulfur, Fertilizer Coating agents, Pharmaceutical intermediates.

Type chart

Model	Theoretical displacement(m1/R)	Applicable series	B/C/W Import and Export		D/E/F/M/N/V Import and export	
			Pipe diameter	B Thread	Pipe diameter	D/E Thread
0.5	0.56	B/C/W/D/E/F/K/L/M/N/P/V	DN10	G3/8	DN15	G1/2
0.8	0.88	B/C/W/D/E/F/K/L/M/N/P/V	DN10	G3/8		
1.2	1.28	B/C/W/D/E/F/K/L/M/N/P/V	DN10	G3/8		
1.6	1.56	B/C/W/D/E/F/K/L/M/N/P/V	DN10	G3/8	DN15	G1/2
2.5	2.52	B/C/W/D/E/F/K/L/M/N/P/V	DN10	G3/8		
3.2	3.24	B/C/W/D/E/F/K/L/M/N/P/V	DN10	G3/8		
4.0	4.08	B/C/W/D/E/F/K/L/M/N/P/V	DN10	G3/8		
5.0	5.04	B/C/W/D/E/F/K/L/M/N/P/V	DN10	G3/8		
6.3	6.35	B/C/W/D/E/F/K/L/M/N/P/V	DN15	G1/2		
8.0	8.03	B/C/W/D/E/F/K/L/M/N/P/V	DN15	G1/2	DN20	G3/4
10	10.02	B/C/W/D/E/F/K/L/M/N/P/V	DN15	G1/2		
12	12.57	B/C/W/D/E/F/K/L/M/N/P/V	DN20	G3/4		
16	16.20	B/C/W/D/E/F/K/L/M/N/P/V	DN20	G3/4		
20	20.03	B/C/W/D/E/F/K/L/M/N/P/V	DN20	G3/4	DN32	G1-1/4
25	25.41	B/C/W/D/E/F/K/L/M/N/P/V	DN20	G3/4		
32	32.13	B/C/W/D/E/F/K/L/M/N/P/V	DN25	G1		
40	40.28	B/C/W/D/E/F/K/L/M/N/P/V	DN25	G1		
50	50.35	B/C/W/D/E/F/K/L/M/N/P/V	DN32	G1-1/4		
63	63.30	B/C/W/D/E/F/K/L/M/N/P/V	DN32	G1-1/4		
65	63.08	B/C/W/D/E/F/K/L/M/N/P/V			DN40	G1-1/2
80	80.13	B/C/W/D/E/F/K/L/M/N/P/V	DN32	G1-1/4		
100	100.59	B/C/W/D/E/F/K/L/M/N/P/V	DN40	G1-1/2		
120	117.64	B/C/W/D/E/F/K/L/M/N/P/V	DN40	G1-1/2		
155	158.56	B/C/W/D/E/F/K/L/M/N/P/V	DN40	G1-1/2		
160	161.12	B/C/W/D/E/F/K/L/M/N/P/V			DN50	G2
200	201.40	B/C/W/D/E/F/K/L/M/N/P/V				
250	251.27	B/C/W/D/E/F/K/L/M/N/P/V			DN65	G2-1/2
320	320.32	B/C/W/D/E/F/K/L/M/N/P/V				
400	402.37	B/C/W/D/E/F/K/L/M/N/P/V				
500	501.26	B/C/W/D/E/F/K/L/M/N/P/V			DN80	G3
630	630.84	B/C/W/D/E/F/K/L/M/N/P/V				
800	801.33	B/C/W/D/E/F/K/L/M/N/P/V			DN100	G4
1000	1001.66	B/C/W/D/E/F/K/L/M/N/P/V				
1200	1204.13	B/C/W/D/E/F/K/L/M/N/P/V			DN125	G5
1600	1603.73	B/C/W/D/E/F/K/L/M/N/P/V				
2000	2002.48	B/C/W/D/E/F/K/L/M/N/P/V			DN150	G6
2500	2501.18	B/C/W/D/E/F/K/L/M/N/P/V				
3200	3207.03	B/C/W/D/E/F/K/L/M/N/P/V			DN200	G8

The above is the general model theory single rotation displacement list, if you can not find the model you like in the list, please contact us for custom-made.

HBB series pump



HBB Series features

The B-series gear metering pump is a precision casting universal pump with good fluid compatibility and good performance in different fluid environments. Its typical feature is the friction plate structure on the side of the gear, which can achieve a metering accuracy of 1‰ under ideal working conditions. The internal bearings are corrosion-resistant sliding bearings, which also perform well in fluid environments with relatively poor lubrication.

Performance parameter

pressure:<30Bar,
speed:<1500r/min
viscosity:<1000Cps
temperature:0-90°C

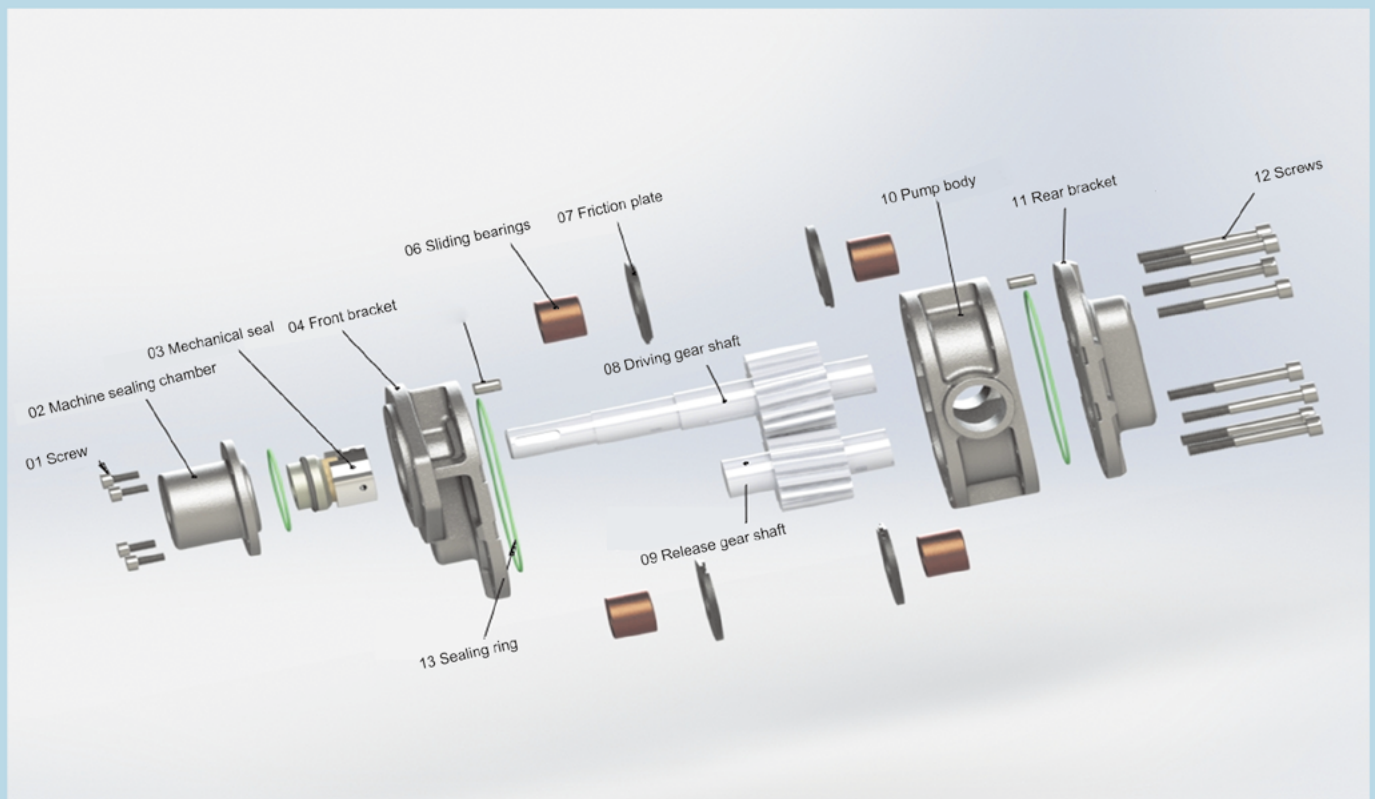
Common materials

Pump casing material:304, 316L, 2205, 2507, QT400
Axis material:440C, 2205, 2507
seal:Mechanical seal, packing seal
Static sealing:Fluorine rubber, perfluoroether, PTFE coated, perfluorinated

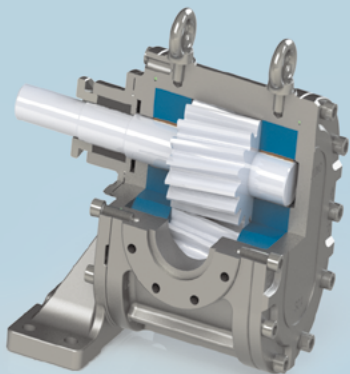
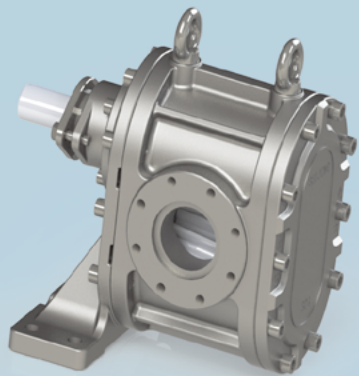
Typical applications of series

Resin,grinding aids,water reducing agents,
papermaking auxiliaries,dyes,filling machines,
honey,butter

HBB Typical structure of the series



HDD series pump



HDD series features

The D series is a precision cast shell D-shaped sleeve structure with smooth shaft sleeve lubrication and cooling design inside. This structure is suitable for highly viscous fluids and can be pumped under high vacuum conditions. The measurement accuracy can reach 1‰, and it is designed with various corrosion-resistant materials.

Performance parameter

Pressure: <100Bar
Speed: <1000r/min
Viscosity: <100000Cps
Temperature: -10-200 °C
Vacuum degree: -0.98Bar

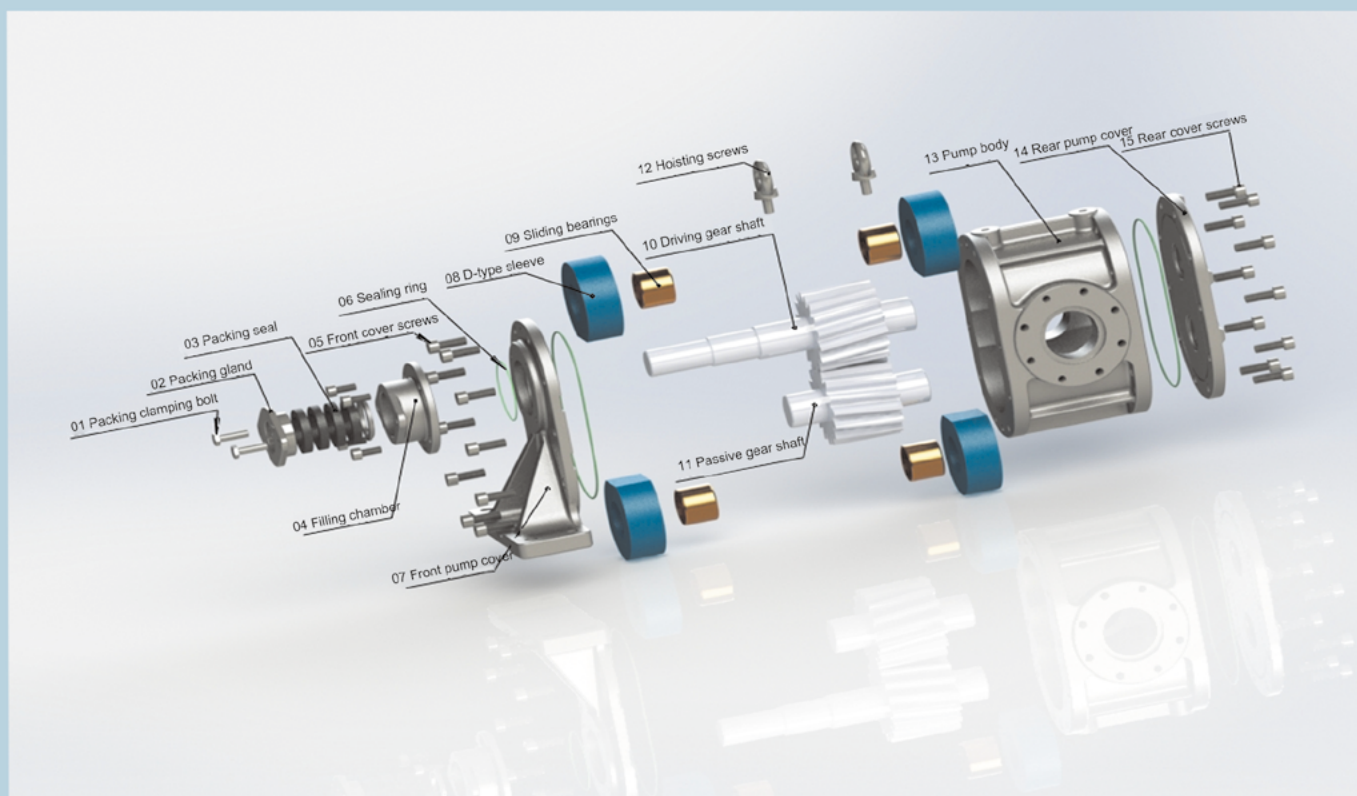
Common materials

Pump casing material: 304316L
Axis material: 440C, 22052507
Sealing: mechanical seal, packing seal
D-type sleeve material: 440C, Cr12, graphite, silicon carbide
Static sealing: fluororubber, perfluoroether, perfluorotetrafluoro

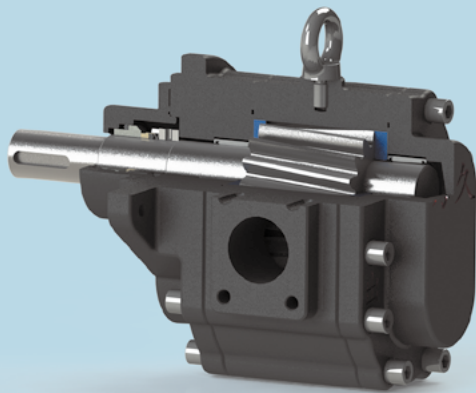
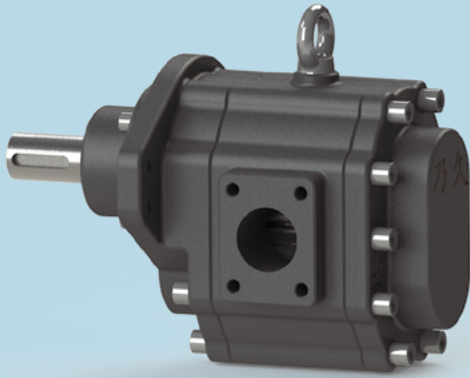
Typical applications of D-series

Molecular distillation, resin, water glass, plastic film, fertilizer coating agent, AB glue, heavy oil, honey, latex paint.

Typical Structure of HDD Series



HZB series pump



Characteristics of HZB series

The HZB series gear metering pump is a cast iron universal metering pump with good fluid compatibility and good performance in non corrosive fluid transmission. Its typical feature is the friction plate structure on the side of the gear, and the internal bearings are self-lubricating material bearings, which have good performance in medium environments with a certain degree of lubrication.

Performance parameter

Pressure:<30Bar

Speed:<1500r/min

Viscosity:<10000Cps

Temperature: 0-90 °C

Common materials

Pump casing materials: QT400, QT500, QT600, HT200

Axis material: 20CrMoTi, 38CrMoAl, 440C, high chromium wear-resistant steel

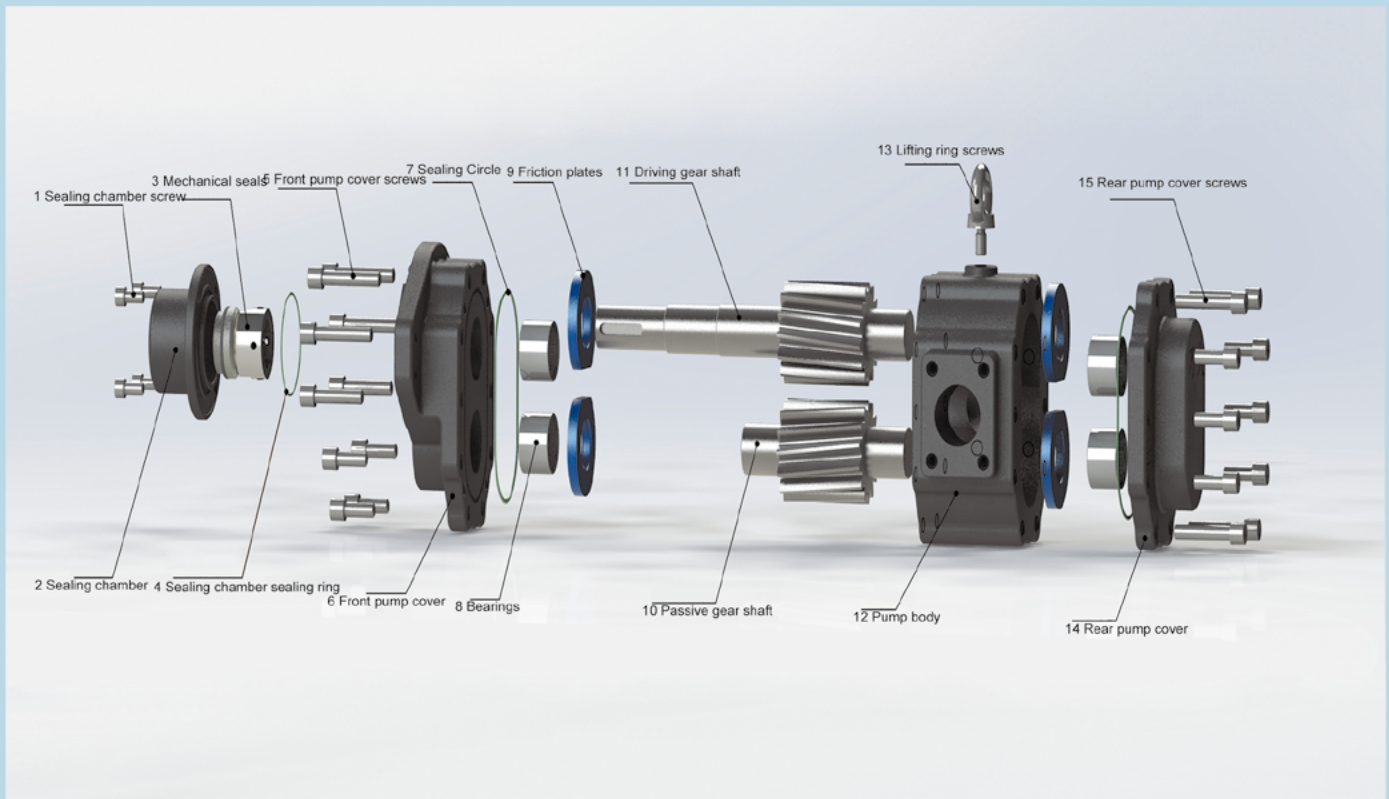
Seals: mechanical seals, packing seals, magnetic seals, and plug seals

Static sealing: fluororubber, perfluoroether, PTFE coated, perfluorinated

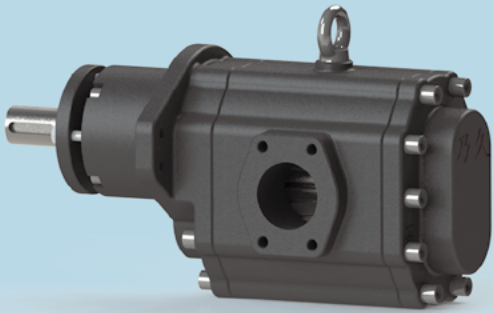
Typical applications

Crude oil, lubricating oil, hydraulic oil, mechanical oil, butter, polyurethane, isocyanate, epoxy resin, stearic acid, rosin, MDI

Typical Structure of HZB Series



HZS series pump



Characteristics of HZS series

The HZS series is a cast iron dual bearing series, which is characterized by providing large radial support and reducing shaft wear under high load and high wear conditions. There is a significant advantage under abrasive conditions.

Performance parameter

Pressure: <30Bar

Speed: <1000r/min

Viscosity: <30000 Cps

Temperature: 0-90 °C

Common materials

Pump casing materials: QT400, QT500, QT600, HT200

Axis material: 20CrMoTi, 38CrMoAl, 440C, high chromium wear-resistant steel

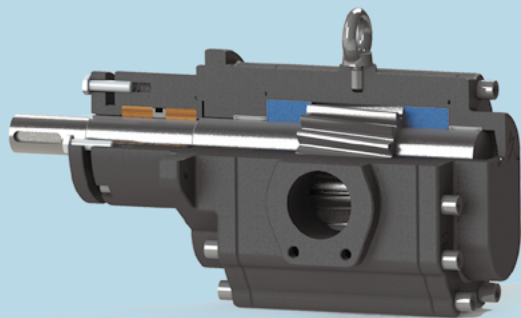
Seals: mechanical seals, packing seals, magnetic seals, and plug seals

D-type sleeve material: 440C, Cr12, graphite, silicon carbide

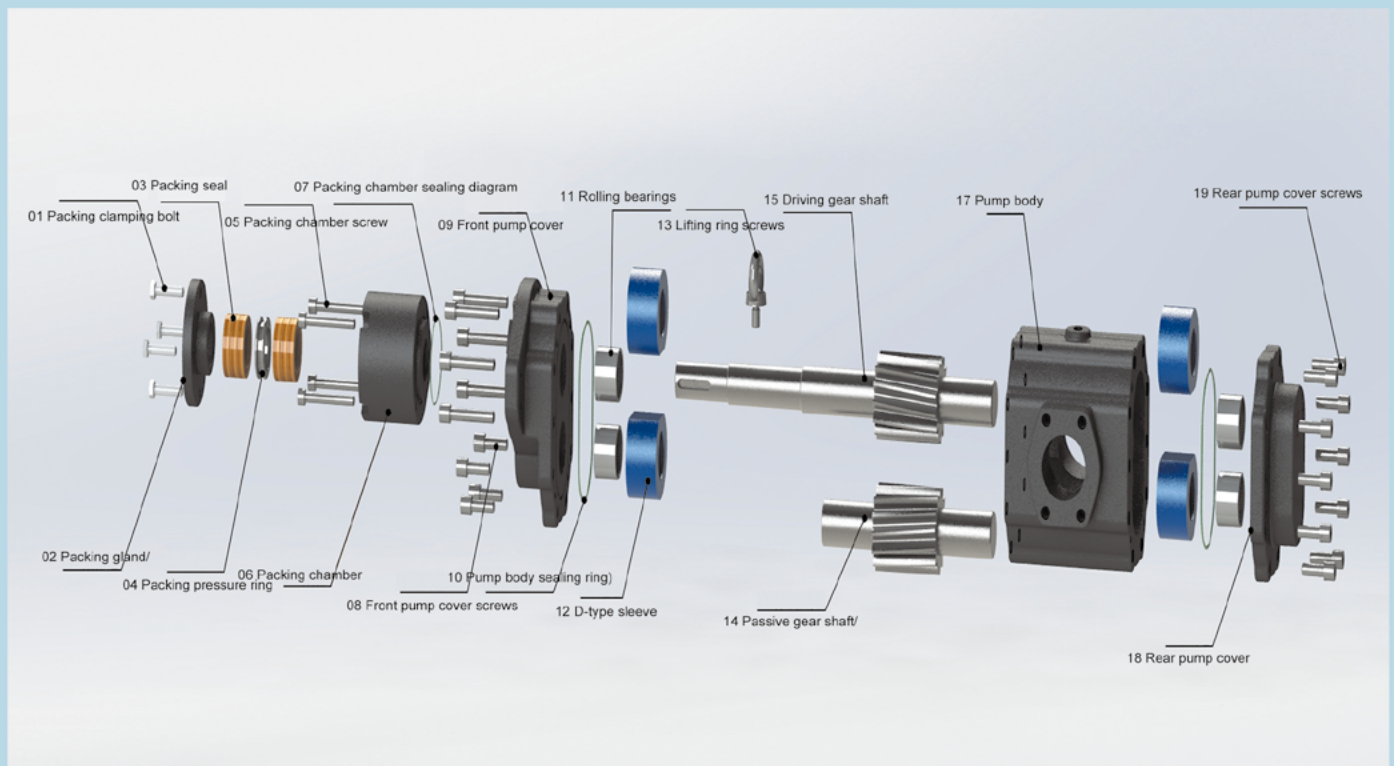
Static sealing: fluororubber, perfluoroether, perfluorotetrafluoro

Typical applications

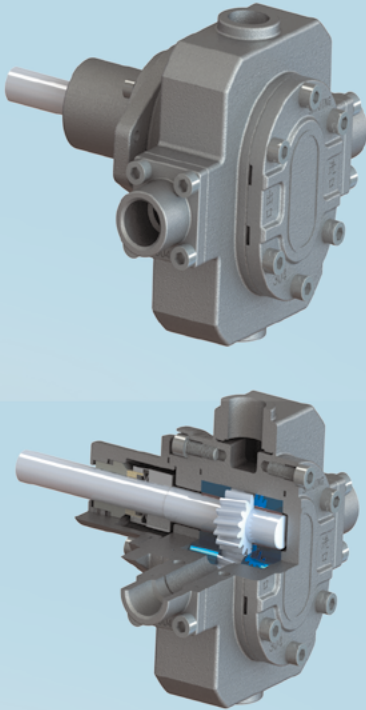
Water glass, paint, coal tar, polyurethane with fillers, silicone sealant with fillers



Typical Structure of HZS Series



HDE series pumps



HDE series features

The E series is a heat medium heating pump for precision casting shells. In the transportation of fluids that require heating, steam, hot water, and thermal oil are used to heat and insulate the pump body, conveying materials that are more convenient to transport at high temperatures. Substances such as paraffin and asphalt use the classic D-shaped sleeve structure inside, with liquid inlet and outlet on the left and right, and thermal medium inlet and outlet on the upper and lower sides. The thermal medium interface on the upper and lower sides avoids steam condensation and sedimentation.

Performance parameter

Pressure:<100Bar
Speed:<1000r/min
Viscosity:<100000Cps
Temperature: -10-300 °C
Vacuum degree: -0.98Bar

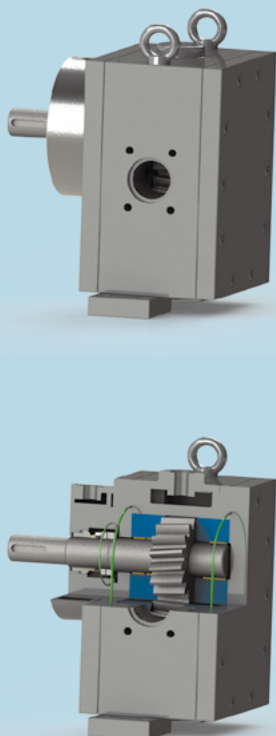
Common materials

Pump casing material: 304316L
Axis material: 440C, 22052507
Sealing: mechanical seal, packing seal
D-type sleeve material: 440C, Cr12, graphite, silicon carbide
Static sealing: fluororubber, perfluoroether, perfluorotetrafluoro

Typical applications of E-series

Paraffin wax, asphalt, paint, hot melt adhesive, high viscosity resin, Polyamine ester, rosin.

HDN series pumps



HDN series features

The N series is a polished version of the thermal medium heating D-type sleeve structure pump, which provides a clean appearance while ensuring high viscosity transportation during heating. The sealing chamber of this structure can be heated synchronously. The heat medium is steam, hot water, thermal oil, etc., which transports various chemical media that need to be cleaned and heated, such as resins, medicines, petroleum chemicals, and sugars.

Performance parameter

Pressure:<100Bar
Speed:<1000r/min
Stickiness:<100000Cps
Temperature: -10-300 °C
Vacuum degree: -0.98Bar

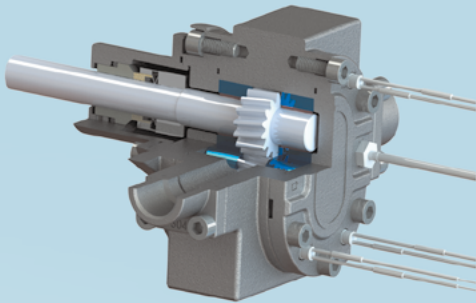
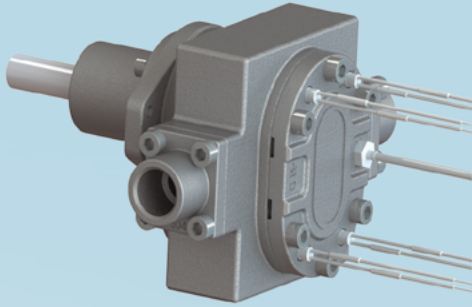
Common materials

Pump casing material: 304316L
Axis material: 440C, 2205.2507
Sealing: mechanical seal, packing seal
D-type sleeve material: 440C, Cr12, graphite, silicon carbide
Static sealing: fluororubber, perfluoroether, perfluorotetrafluoro

Typical applications of D-series

Paraffin, asphalt, paint, hot melt adhesive, high viscosity resin, polyurethane, rosin.

HDK series pump



HDK series features

The K series has a D-type sleeve structure with an electrically heated precision-cast shell. The biggest feature of this pump is that it uses an electric heating rod to heat the pump body. It has good heating convenience and can accurately transport materials that need to be heated and transported. The precision-cast shell makes Lightweight construction and good economy.

Performance parameters

Pressure:<30Bar
Speed:<1000r/min
Viscosity:<100000Cps
Temperature:-10-300°C
Vacuum degree:-0.98Bar

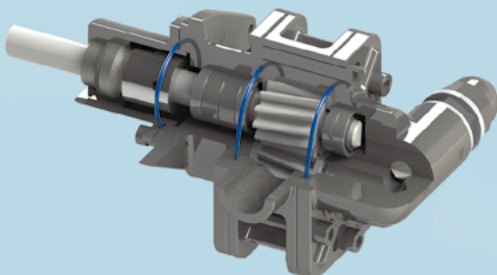
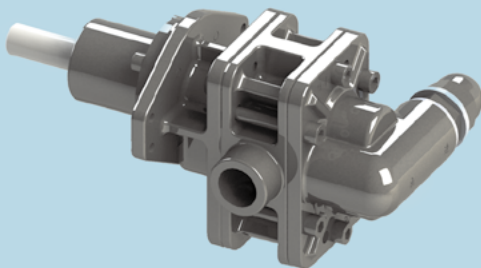
Commonly used materials

Pump shell material:304.316L
Shaft material: 440C, 2205, 2507
Seal: Mechanical seal, Packing seal D-type sleeve material: 440C, Cr12, Graphite, Silicon carbide
Static seal: Fluorine rubber, Perfluoroether, Perfluoroethylene

Typical application

Paraffin, Asphalt, Paint, Hot melt adhesive, High viscosity resin, Polyurethane.

HBS series pump



HBS series features

The B series gear metering pump is a precision-cast version of a general-purpose pump with good fluid compatibility and good performance in different fluid situations. Its typical feature is the friction plate structure on the side of the gear. The metering accuracy can reach 1 under ideal working conditions. %, the internal bearing is a corrosion-resistant sliding bearing, which also performs well in a fluid environment with relatively poor lubricity.

Performance parameters

pressure: <30Bar
Speed:<1500r/min
Viscosity:<1000Cps
Temperature: 0-90°C

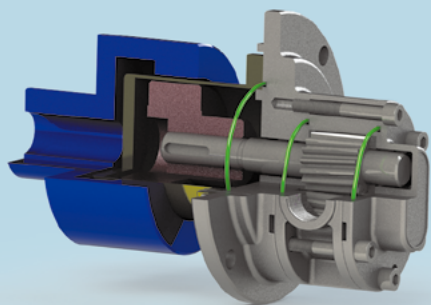
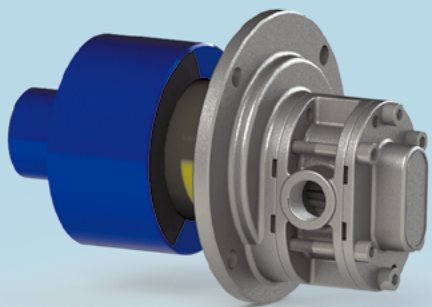
Common materials

Pump shell material: 304, 316L, 2205, 2507, QT400
Shaft material: 440C, 2205, 2507
Seal: Mechanical seal, Packing seal
Static seal: Fluorine rubber, Perfluoroether, PTFE-coated, Perfluorocarbon

Typical application

Resin, Grinding aid, Water reducing agent, Papermaking aid, Dye, Filling machine, Honey, butter

HBBV series pump



HBBV series features

The V series is a magnetic driven friction plate structure, which is characterized by providing a completely sealed magnetic drive structure. It has obvious advantages in highly toxic, explosive, and corrosive environments, and the shell adopts a precision casting structure.

Performance parameter

Pressure: <30Bar
Speed: <1000r/min
Viscosity: <1000Cps
Temperature: -18-200 °C

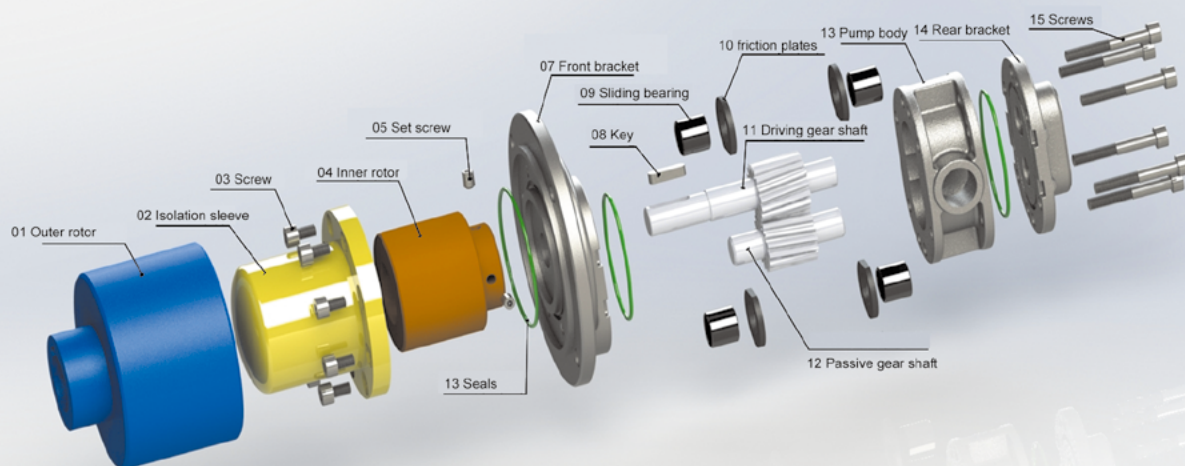
Common materials

Pump casing material: 304316L, 2507
Axis material: 440C, 22052507
Sealing: mechanical seal, packing seal
D-type sleeve material: 440C, Cr12, graphite, silicon carbide
Static sealing: fluororubber, perfluoroether, perfluorotetrafluoro

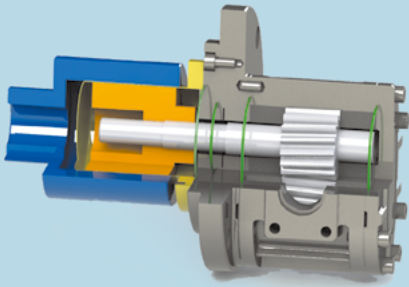
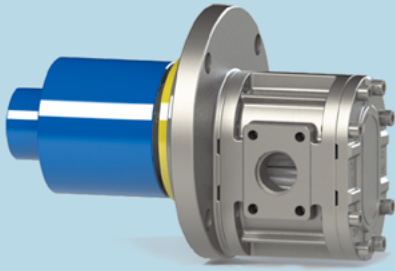
Typical applications

Hydrochloric acid, dimethyl ether, ether, formaldehyde, liquefied gas transportation, Flammable and explosive fluids such as gasoline and benzene

Typical Structure of HBBV Series



HDDV series pumps



HDDV series features

The V series adopts a D-shaped sleeve structure for magnetic driven polishing shells, mainly suitable for use in low flow and high vacuum scenarios. It transports and measures liquids under certain vacuum conditions or initial pressure. The structure adopts a polished shell, making it easy to clean the shell.

Performance parameter

Pressure: <100Bar
Speed: <1000r/min
Viscosity: <50000Cps
Temperature: -10-200 °C
Vacuum degree: -0.98Bar

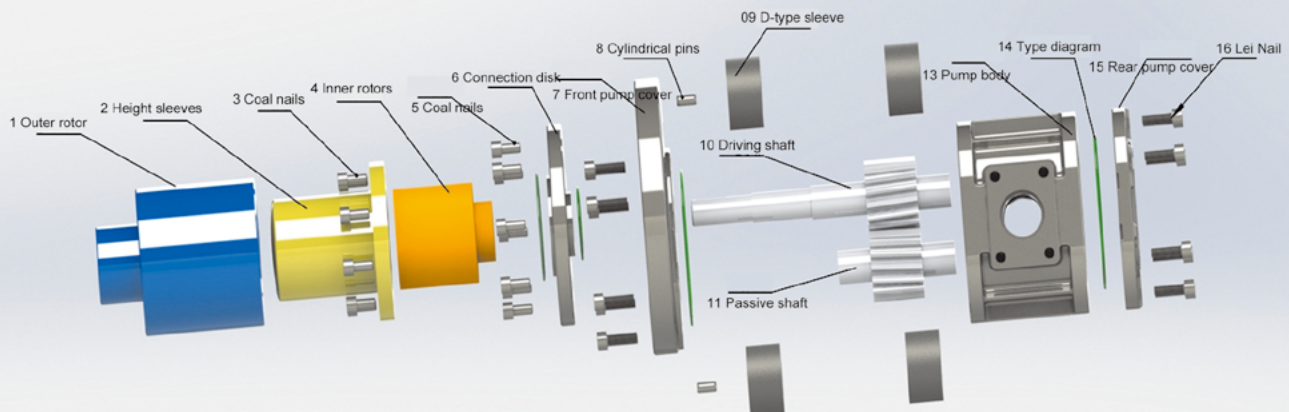
Common materials

Pump casing material: 304316L
Axis material: 440C, 22052507
Sealing: mechanical seal, packing seal
D-type sleeve material: 440C, Cr12, graphite, silicon carbide
Static sealing: fluororubber, perfluoroether, perfluorotetrafluoro

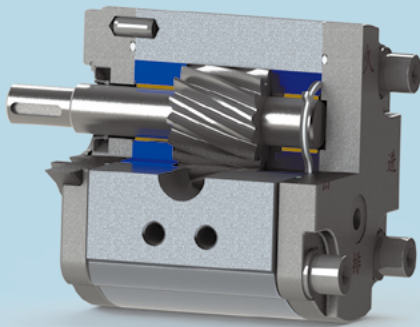
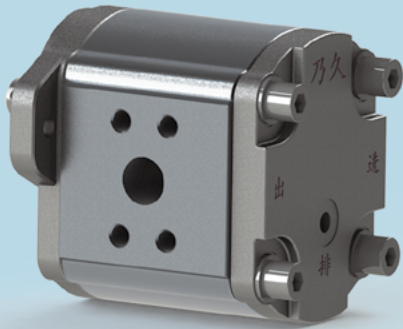
Typical applications

Flammable and explosive fluids such as hydrochloric acid, dimethyl ether, ether, formaldehyde, liquefied gas transportation, gasoline, benzene, etc

Typical Structure of HDDV Series



YDZ series medium pressure spiral gear metering pump



Characteristics of YDZ series hydraulic pump

The Z-series hydraulic pump is a medium pressure gear pump with an alloy aluminum pump body. The bearing is a classic double 8-shaped sleeve structure. In order to achieve responsive pressure and good volumetric efficiency, high-pressure oil floating structures are used on both sides of the 8-shaped sleeve. This structure is an important measure to establish pressure and ensure volumetric efficiency. The bearing part is made of integral copper based powder metallurgy material, which has good dimensional stability and lubrication. The pump body adopts a spiral tooth structure, which greatly reduces the noise during operation. Due to the use of the spiral tooth structure, the pressure oil obtained is less pulsating

Performance parameter

Pressure: 10~20MPa

Speed: ≤ 2500 r/min

Medium: 32 # 46 # hydraulic oil

Temperature: $-40\text{ }^{\circ}\text{C}$ ~ $90\text{ }^{\circ}\text{C}$

Common materials

Pump casing: carbon steel, aluminum alloy, QT400

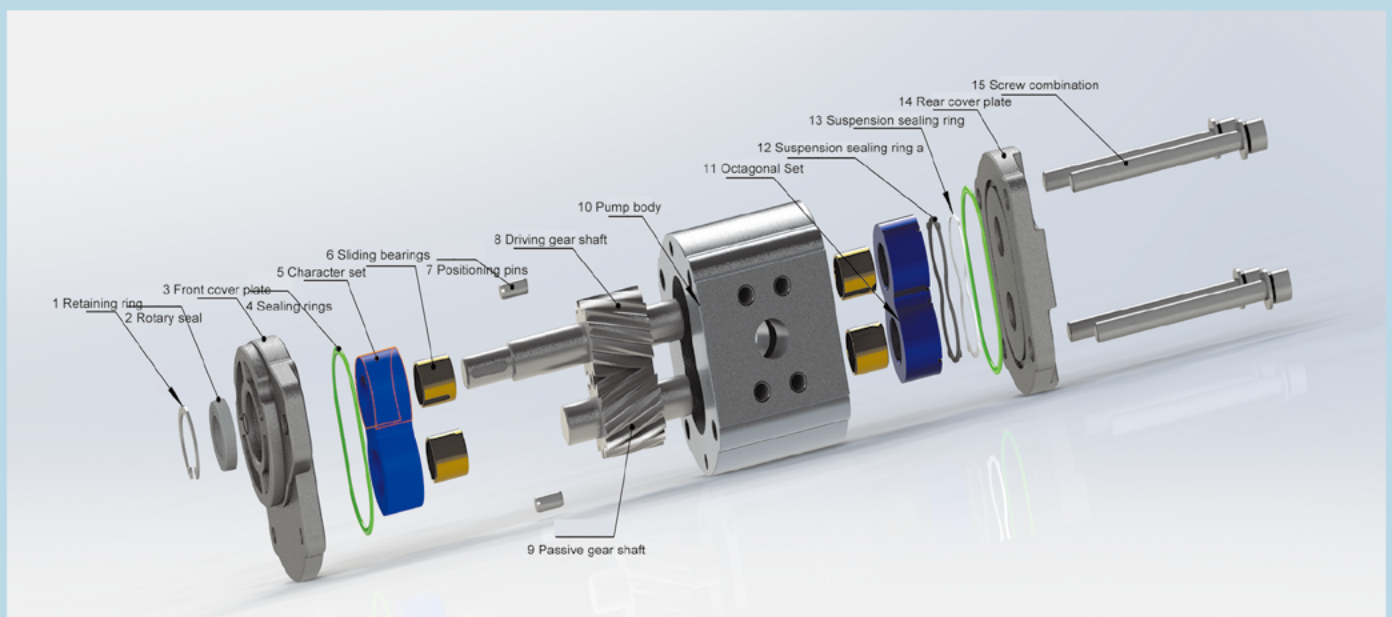
Pump shaft: 20CrMoTi

Sealing: Dingqing rubber lip seal, Dingqing rubber O-ring fluorine.

Typical operating conditions

Pressure machines, cranes, construction machinery, tanks, armored vehicles, Aircraft, operating in an environment with an equal rated pressure of 10-20MPa.

Typical structure of YDZ series medium pressure spiral gear metering pump



APPLICATION SITE DIAGRAM OF GEAR PUMP



Edible oil filling



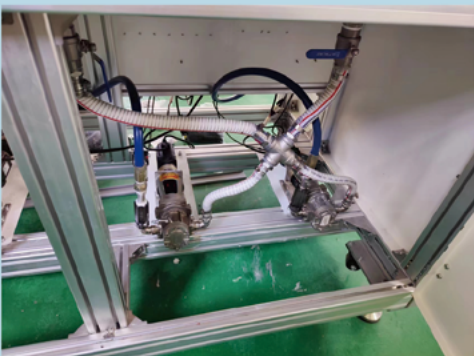
Food filling applications



Beverage filling applicoias



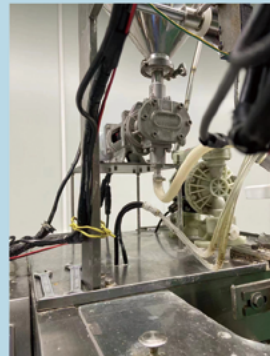
Chemical qlue application



A and B glue application



Food filling site



Food filling applications



Honey filling

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