KINGLAI

Sanitary Pumps

KINGLAI

Kinglai Hygienic Materials Co., Ltd

ADD: No.22 West Lufeng Road, Lujia Town,
Jiangsu Province, P.R.C
TEL: +86(0)512-57871991
FAX: +86(0)512-57871472
Email: sales@kinglai.com.cn
WEB: www.kinglai.com.cn

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3A CE

CONTENTS

Fully-upgradedSanitary Pumps

In order to satisfy the application requirements of customers' complex working conditions, KingLai Group never stops its exploration in the development and application of sanitary pumps, and set up a sanitary pump R&D center in the US in 2016. Our R&D team, formed by American experts with doctorates, has successfully developed all series of sanitary pumps based on the demands in the global market, including centrifugal pumps, self-priming pumps, shearing pumps, rotor pumps and high-efficiency mixing systems, etc.

Entirely-newStructural Design and Technology

Every pump from KingLai is quality and reliable. With over 20 years' technical accumulations and industrial application experiences, our pumps can run with high efficiency and stability. As for the design of pumps' flow passages, details determine success or failure. Thanks to appropriate design of the clearance between pump cavity and the impeller structure, our products can run quietly and stably with less volume loss and lower NPSH. Processed through CNC five-axis machining center after precise casting, the impeller boasts outstanding precision.

BPE-104

S Series Sanitary High-efficiency Centrifugal Pumps

Specially designed for professional fields with high-performance demands and high cleanliness requirements, King Lai KL-S Series Sanitary High-efficiency Centrifugal Pumps conform to the standards of water for injection (WFI) and are also suitable for other demanding application fields. This series of centrifugal pumps has higher energy efficiency ratio and thus can effectively reduce users' continuous input cost.

KL-S Series Sanitary High-efficiency Centrifugal Pumps use open-type cast impellers processed through CNC five-axis machining to ensure high strength and excellent processing accuracy. Moreover, the unique structure and optimized hydrodynamic design can ensure smooth and efficient running, longer comprehensive service life, and low noise.

Heavy-duty structure

A minimal design wall thickness of 6mm is adopted by the S Series Sanitary Centrifugal Pumps to ensure their stable performance in pressure resistance, vibration and shock, thus providing the best guarantee for their efficient and trouble-free operations.

Compact internal structure

Smaller and more appropriate structural clearance ensures efficient running. The clearance between the pump case and the impeller is 0.5mm, which can minimize the volume loss in the pump chamber. The ultra-low NPSH value ensures normal operation even in adverse suction conditions.
Moreover, the conveyed materials can contain gas or solid granules in either homogeneous or heterogeneous state.

Various types of mechanical seals available

Thanks to the design of front rotating ring load seal, the operator just needs to remove the pump cover and impeller, without dismantling the pump case, to complete easy maintenance of the single or double mechanical seal. Depending on different materials, temperatures and operating conditions, a variety of sealing materials are available, which are completely applicable to CIP and SIP systems.

Sterile and ultra-clean design

The degree of finish for surfaces of the pump chamber, impeller, gland, and other parts in contact with liquids is below Ra0.5μm. In principle, concave corner shall not be set inside the flow passage; if unavoidable, its radius shall be above 1.6mm, so as to ensure smooth flowing of the medium or cleaning fluid without holdup to prevent bacteria breeding and product cross-contamination.

Minimization of secondary turbulence

The optimized design of pump pressure passage according to the fluid mechanics principle guarantees stable and smooth delivery of materials, minimizes secondary turbulence of materials in the pump head, and reduces temperature increase-thermal effect of materials, thus ensuring high efficiency of the pump.

C Series Sanitary Centrifugal Pumps

KingLai Group's centrifugal pumps include KL-C Series Sanitary Centrifugal Pumps and KL-S Series High-efficiency Centrifugal Pumps. Through targeted selection, the two types of centrifugal pumps can be applied in almost all the scenarios requiring sanitary conveying.

With cost being mainly considered, KL-C Series Centrifugal Pumps are highly economical and cost-effective with stable running and simple structure. Being suitable for applications that require soft material processing, the open-type impeller design can ensure the completeness of materials to the maximum extent. Various types of mechanical seals are available, which are made of FDA-certified materials that conform to 3A standard.

F-type seal ring

As an ideal choice when the temperature of fluid is higher than 100° C and the vacuum degree is about 355mmHg, the seal ring can be washed by water.

Connection of pump spindle

The reliable structural design can help reduce run-out of spindle vibration, and noise, thus extending the service life of the mechanical seal.

Stable mechanical seal

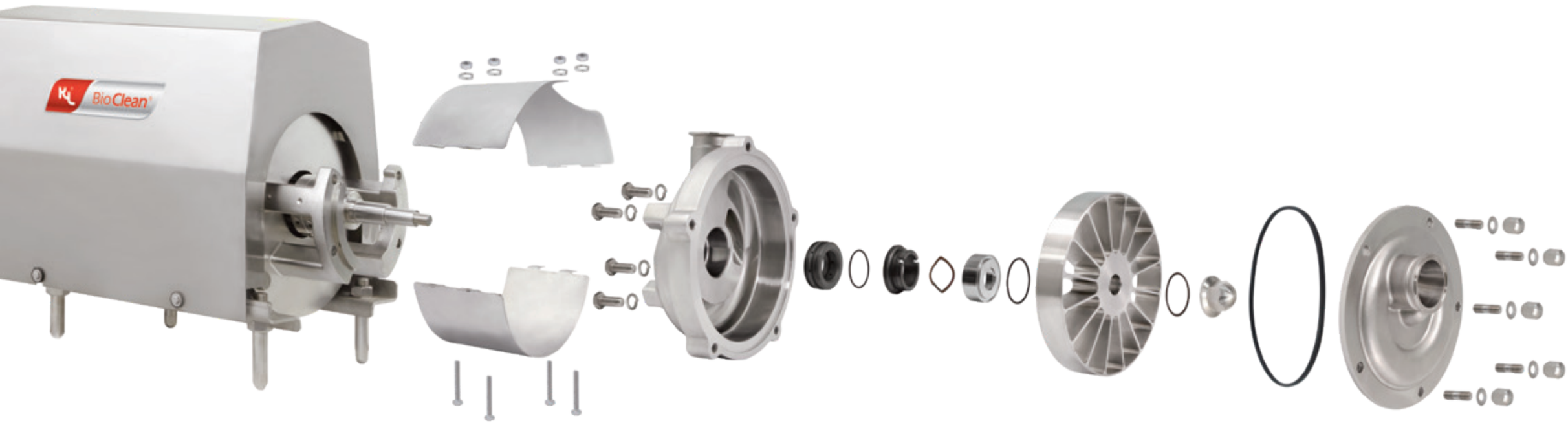
The seal can provide reliable and stable operation in longer service life, thus achieving less downtime. The high surface finish can help reduce the surface pressure of the sealing ring, thus reducing wear and improving efficiency.

Open-type impeller design

Suitable for conveying materials containing particles or relatively viscous materials, the special design of impeller and its internal structure can achieve stable and smooth conveying and maximally ensure material completeness.

Pump case

Made of high purity 316L stainless steel sheet through integrated cold extrusion forming and butt welding, the pump case features excellent strength, outstanding toughness and fine surface finish, which is more corrosion preventive and hygienic.



L Series Sanitary Self-priming Pumps

With excellent self-priming capacity and reliability, KingLai Group's KL-L Series Self-priming Pumps are suitable for industries like food and beverages, pharmaceutical engineering as well as fine chemical engineering.

With the radially-arranged unique ring-type impeller, KL-L Series boast optimized inner clearance of pump chamber to achieve its self-priming performance and high working efficiency, thus being widely recognized by customers.

Under conditions where the process medium contains gas, KL-L Series Self-priming Pumps are an ideal solution, which can convey products containing air or bubbles. Therefore, in addition to sucking materials, these self-priming pumps are widely used in CIP systems, as they are especially suitable to serve as the return pump for the CIP systems or to be used to exhaust the storage tanks.

Optimized flow passage

As for the design of flow passages, details determine success or failure. With the optimized design of flow passage and more appropriate inner clearance of pump chamber, the L Series Self-priming Pumps can effectively reduce loss and achieve higher working efficiency. Furthermore, they can be used for pumping products with air or bubbles.

Various types of mechanical seals available

This series can use the same type of mechanical seals as KL-S Series Sanitary High-efficiency Centrifugal Pumps, thus making it easier for inventory and maintenance.

Thanks to the design of front rotating ring load seal, the operator just needs to remove the pump cover and impeller, without dismantling the pump case, to complete easy maintenance of the single or double mechanical seal. Depending on different materials, temperatures and operating conditions, a variety of sealing materials are available, which are completely applicable to CIP and SIP systems.

Impeller

Lateral pressure passage and radially-arranged unique impeller blade are designed to work together to achieve joint transmission of pressure energy.

J Series Sanitary Shearing Pump

KL-J Series Shearing Pumps are the best solutions for in-production homogenization and emulsification, which are widely used in the industries of foods, beverages and bio-pharmaceuticals, etc. They can effectively mix heterogeneous products and output stable emulsified liquids after shearing teeth’ s complete shearing and emulsification to prevent agglomeration and solidification. All KL-J Series Shearing Pumps are especially suitable for volume mixing production, and can be connected with SIP and CIP systems.

Compared with conventional in-tank mixing or in-furnace dissolution process, KL-J Series Shearing Pumps can substantially reduce the time required for homogenization and emulsification with approximately 10% raw materials saved, thus reducing your cost.

With the shearing teeth being precisely manufactured by CNC milling machine, KL-J Series Shearing Pumps boast a finish degree lower than 0.5μm for surfaces in contact with liquids, to avoid bacteria or hazardous substance contamination in tiny spaces.

High-efficiency structure

The clearance between the rotor or stator and the pump case is always 0.5mm, and the shearing teeth are arranged reversely to the cutter point to produce gas explosion effect, which can realize further shearing and breaking of materials at the rear part of the shearing teeth, thus ensuring shearing effect and medium heterogeneity.

Ultra clean and sterile design

The surface roughness of the pump chamber, rotor and stator, and other parts in contact with liquids is below Ra0.5μm, to avoid bacteria or hazardous substance contamination in tiny spaces.

Heavy-duty structure

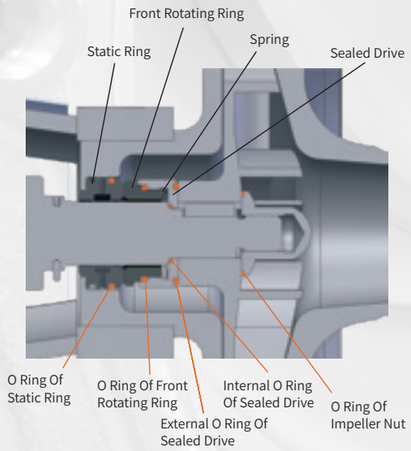
The wall thickness of the J Series Sanitary Shearing Pumps is at least 6mm, to ensure their stable performance in pressure resistance, vibration and shock, etc., thus providing the best guarantee for their efficient and trouble-free operations.

Various types of mechanical seals available

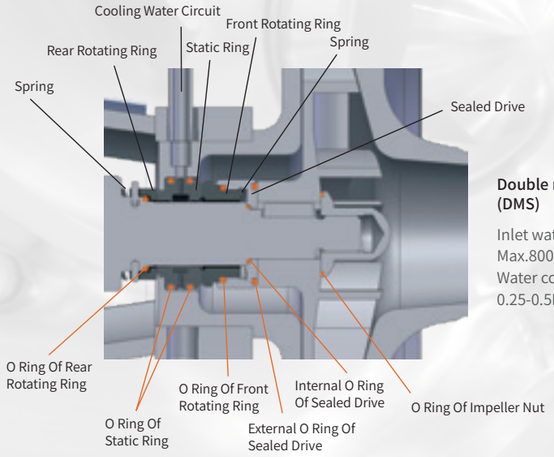
This series can use the same type of mechanical seals as KL-S Series Sanitary High-efficiency Centrifugal Pumps, thus making it easier for inventory and maintenance. Thanks to the design of front rotating ring load seal, the operator just needs to remove the pump cover and impeller, without dismantling the pump case, to complete easy maintenance of the single or double mechanical seal. Depending on different materials, temperatures and operating conditions, a variety of sealing materials are available, which are completely applicable to CIP and SIP systems.

Various types of mechanical seals available

Single mechanical seal



Double mechanical seal



Double mechanical seal (DMS)

Inlet water pressure:
Max.800kPa(8bar)
Water consumption:
0.25-0.5L/min

Working conditions of double mechanical seal:

- **High-viscosity medium**: The floating of the rotating ring will be affected due to the high medium viscosity and the medium may leak with a single seal; furthermore, the high-viscosity fluid will feature slow backflow at the mechanical seal, resulting in poor cooling effect of the fluid on the mechanical seal. In view of this, double mechanical seals shall be used with external supply of cooling circulating water.
- **High-temperature medium:** As high temperature will cause faster seal wearing, reduce material strength and speed up aging of sealing rings, double mechanical seal shall be used with external supply of cooling circulating water.
- **Medium containing solid particles:** Solid particles will also affect the floating of the rotating ring and speed up seal wearing; in addition, the fluid with solid particles will feature slow backflow at the mechanical seal, resulting in poor cooling effect of the fluid on the mechanical seal. In view of this, double mechanical seal shall be used with external supply of cooling circulating water.
- **High system pressure (above 4 Bar):** As the medium may leak with an externally-installed single mechanical seal, double mechanical seal can be resistant to pressure up to 6 Bar.
- In case of severe cavitation, the distance of the impeller’ s axial motion will become larger and the seal wearing will be quickened, so double mechanical seal shall be used with external supply of cooling water.

D–type single mechanical seal

D-type externally balanced food sealing ring (sanitary)
Material of sealing ring: SS/C (rotating ring)
Working condition: Ordinary temperature pure water, etc.

DG-type single mechanical seal

DG-type externally balanced sealing ring with stationary ring (sanitary)
Material of sealing ring: SiC / C (rotating ring)
Working conditions: Ordinary temperature medium without viscosity or particles
Material of sealing ring: SiC/SiC (rotating ring)
Working conditions: 50°C - 90°C or viscous medium with particles

E-type mechanical seal

E-type flush-type double mechanical seal (sanitary)
Material of sealing ring: SS/SiC/CC (rotating ring)
Working condition: Above 90°C or viscous medium with particles

F-type single mechanical seal

Flush-type externally balanced sealing ring (sanitary)
Same structure with D-type, it also has flush function
Suitable for applications with special demands

S Series Sanitary High-efficiency Centrifugal Pumps

Application fields

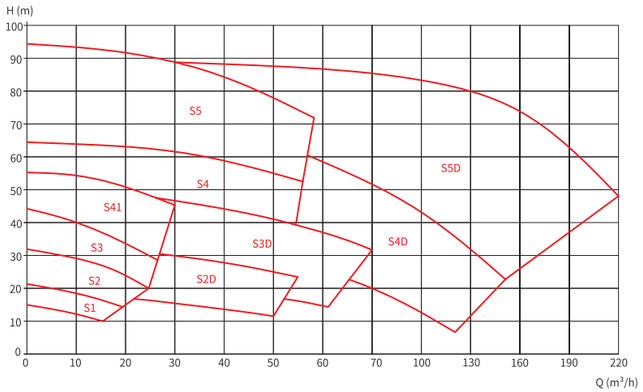
Specially designed for professional fields with high-performance demands and high cleanliness requirements, KingLai Group's KL-S Series Sanitary High-efficiency Centrifugal Pumps conform to the standards of water for injection (WFI) and are also suitable for other demanding application fields. While meeting the sanitary standards and the requirements on soft processing, this series of centrifugal pumps also boast chemical stability. In addition, they dazzle with higher energy efficiency ratio and thus can effectively reduce users' continuous unput cost.

There are altogether ten models of KL-S Series Sanitary High-efficiency Centrifugal Pumps, i.e. S1, S2, S3, S41, S4, S5, S2D, S3D, S4D and S5D.

Structural design

- Processed through CNC five-axis machining, the open-type cast impeller boasts high strength, excellent processing accuracy and easy cleaning.
- The low NPSH value of S Series Sanitary Pumps ensures normal operation even in adverse suction conditions. Moreover, the conveyed materials can contain gas or solid granules.
- The degree of finish for surfaces of the pump chamber, impeller, gland, and other parts in contact with liquids is below Ra0.5μm. In principle, concave corner shall not be set inside the flow passage. If unavoidable, the radius of the concave corner shall be above 1.6mm, thus ensuring smooth flowing of the medium or cleaning fluid without holdup.

Model spectrum

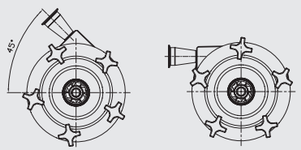


Technical parameters

Item	Parameter
Material	Steel parts of flow passage components: W. 1.4404(316L)
	Other steel parts: W. 1.4301(304)
	Surface treatment: Ra ⩽ 0.5μm
	Sealing elements of flow passage components: VITON,EPDM,TEFLON
Joint for flush-type spindle seal	6mm tube/1/8" (G thread) external thread
Motor	ABB B35 series motor with base flange connection; conforming to IEC metric standards; 2 poles = 3000/3600rpm at 50/60Hz.
	Model: standard motor with fixed ball bearing mounted on the drive end
Operating data	Max. inlet pressure: 800kPa (8 bar)
	Temperature: -20°C ~ 180°C
	Water consumption: 0.25-0.5L/min (flush-type double-end mechanical seal)
	Noise: 60-80dB(A), at 1m
	Head: 0-94m
	Flow rate: 220T/h

Options

A. Impeller with reduced diameter
B. Motor applicable to other voltage or frequency
C. Motor with higher safety/explosion-proof grade
D. Double-end mechanical seal
E. Discharge outlet: discharge from connector or discharge from diaphragm valve
F. Outlet direction of pump, see the following drawing:



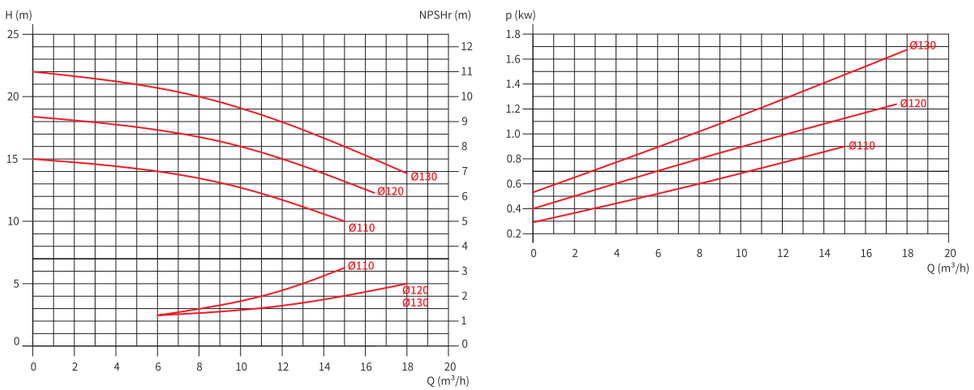
Order

Please provide the following information in the order:

- Model of pump
- Connection: ferrule type, welded type, flanged type or threaded type
- Impeller diameter
- Rated power of motor
- Voltage and frequency
- Flow rate, pressure and temperature
- Density and viscosity of product
- Options

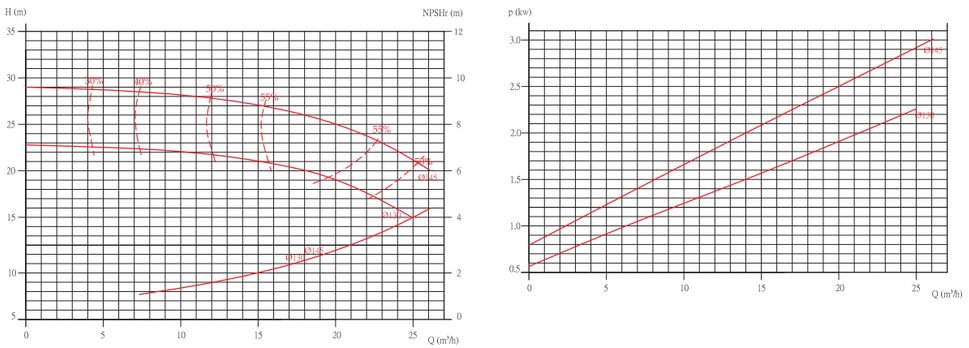
S1

Medium	RPM	Frequency	Impeller diameter		Inlet dimension	Outlet dimension	Material
			Max.	Min.			
20±5°C clean water	2950RPM	50HZ	Ø130	Ø110	DN50	DN40	316L/304



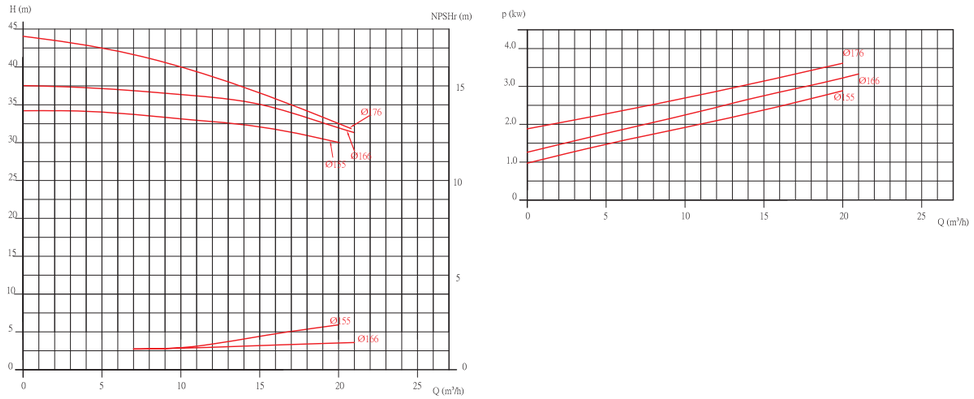
S2

Medium	RPM	Frequency	Impeller diameter		Inlet dimension	Outlet dimension	Material
			Max.	Min.			
20±5°C clean water	2950RPM	50HZ	Ø140	Ø130	DN50	DN40	316L/304



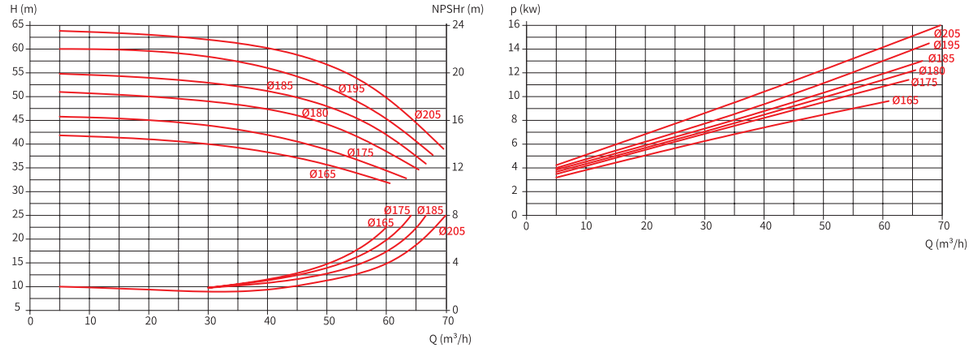
S3

Medium	RPM	Frequency	Impeller diameter		Inlet dimension	Outlet dimension	Material
			Max.	Min.			
20±5°C clean water	2950RPM	50HZ	Ø205	Ø155	DN50	DN40	316L/304



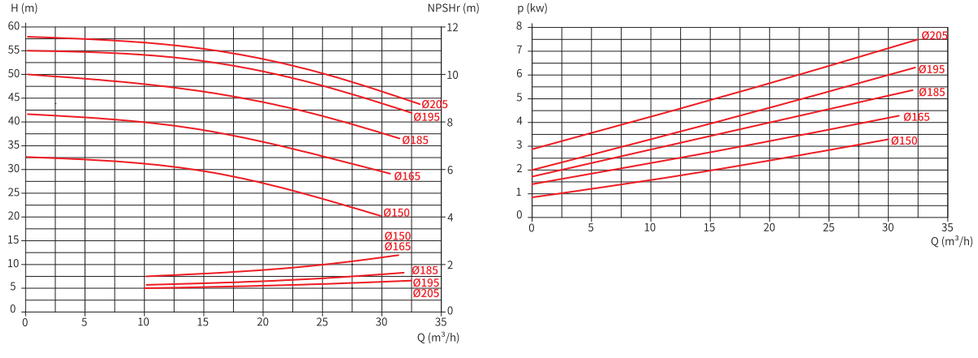
S41

Medium	RPM	Frequency	Impeller diameter		Inlet dimension	Outlet dimension	Material
			Max.	Min.			
20±5°C clean water	2950RPM	50HZ	Ø205	Ø165	DN65	DN50	316L/304



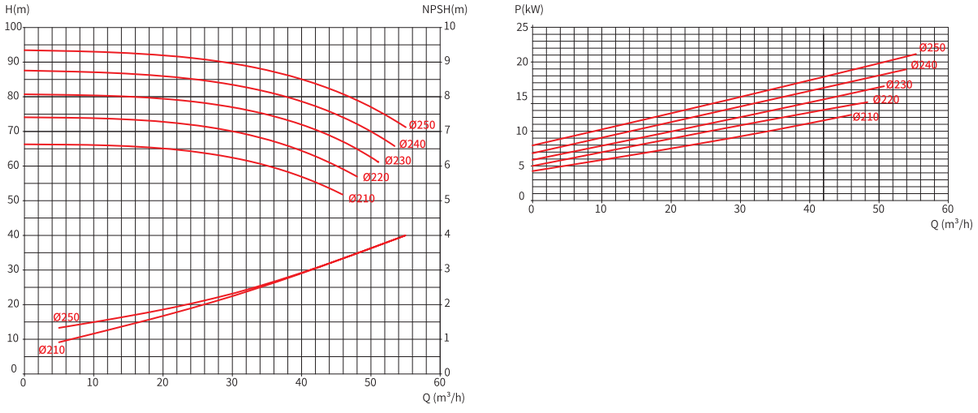
S4

Medium	RPM	Frequency	Impeller diameter		Inlet dimension	Outlet dimension	Material
			Max.	Min.			
20±5°C clean water	2950RPM	50HZ	Ø205	Ø150	DN65	DN50	316L/304



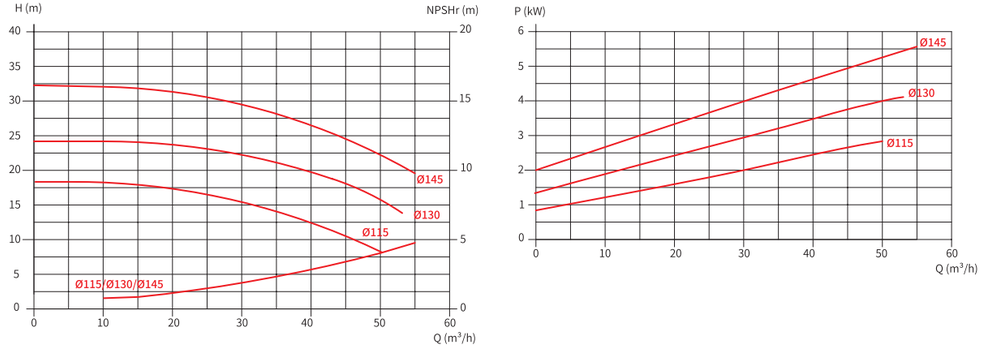
S5

Medium	RPM	Frequency	Impeller diameter		Inlet dimension	Outlet dimension	Material
			Max.	Min.			
20±5°C clean water	2950RPM	50HZ	Ø250	Ø210	DN80	DN50	316L/304



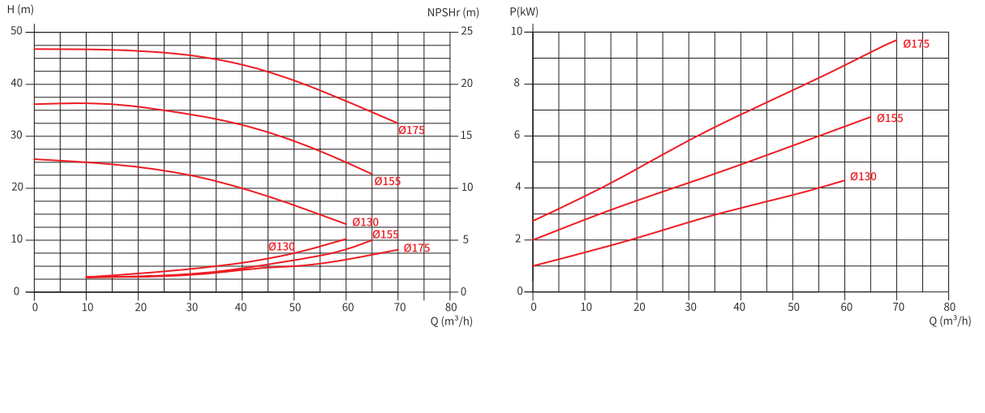
S2D

Medium	RPM	Frequency	Impeller diameter		Inlet dimension	Outlet dimension	Material
			Max.	Min.			
20±5°C clean water	2950RPM	50HZ	Ø145	Ø115	DN65	DN50	316L/304



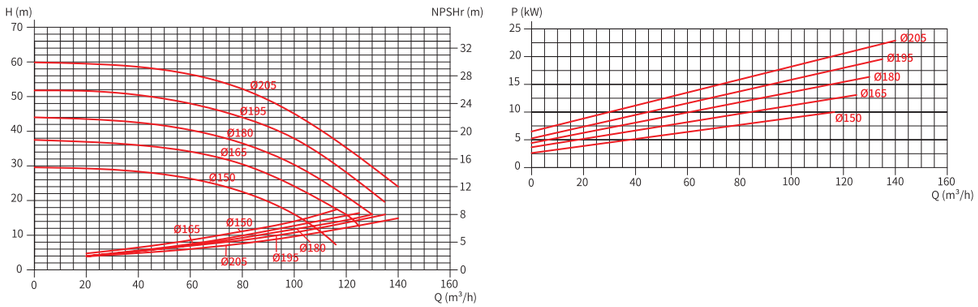
S3D

Medium	RPM	Frequency	Impeller diameter		Inlet dimension	Outlet dimension	Material
			Max.	Min.			
20±5°C clean water	2950RPM	50HZ	Ø205	Ø155	DN65	DN50	316L/304



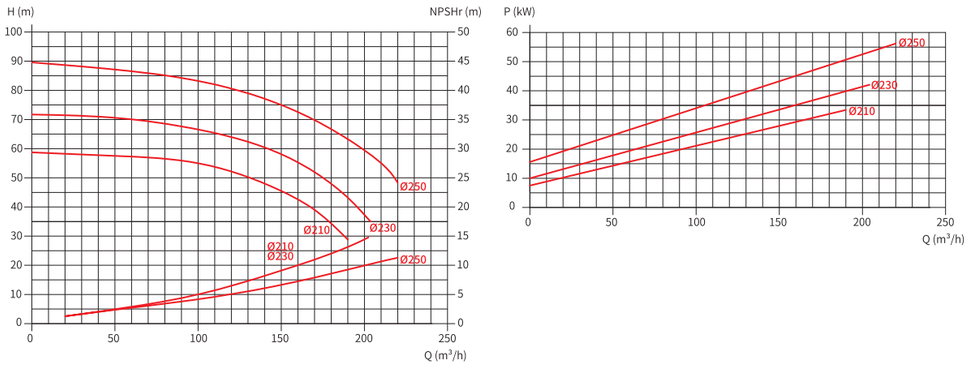
S4D

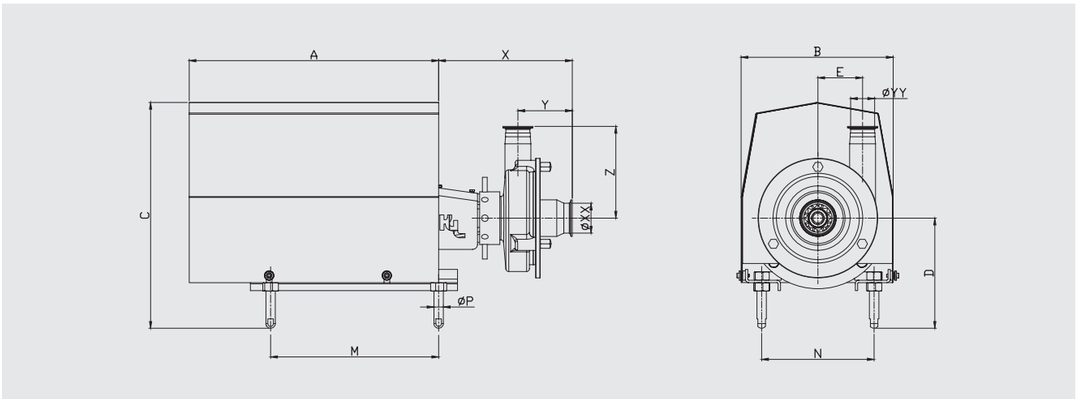
Medium	RPM	Frequency	Impeller diameter		Inlet dimension	Outlet dimension	Material
			Max.	Min.			
20±5°C clean water	2950RPM	50HZ	Ø205	Ø150	DN80	DN65	316L/304



S5D

Medium	RPM	Frequency	Impeller diameter		Inlet dimension	Outlet dimension	Material
			Max.	Min.			
20±5°C clean water	2950RPM	50HZ	Ø250	Ø210	DN80	DN65	316L/304



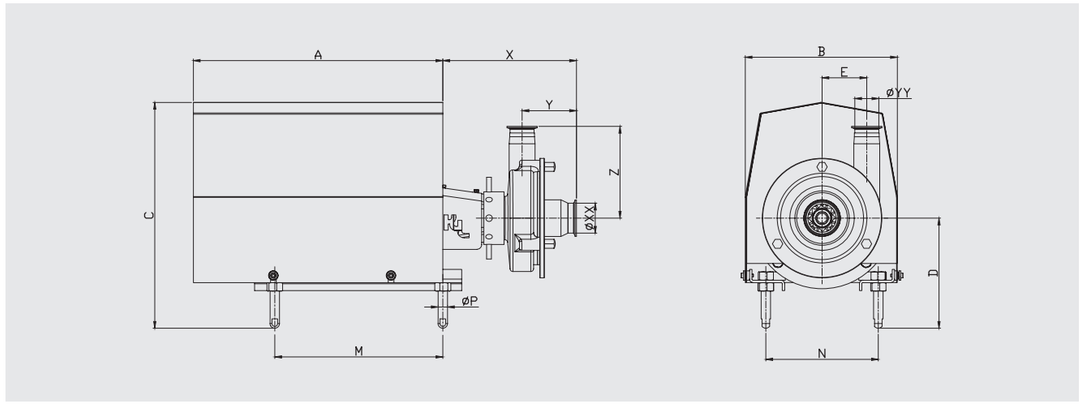


S1

Model	X	Y	Z	E	XX	YY	A	B	C min	C max	D min	D max	M	N	P
S1-80	225	95	142	58	50.8	38.1	360	230	338	358	177	197	230	154	Ø16
S1-90	225	95	142	80	50.8	38.1	360	230	335	355	170	190	255	158	Ø16
S1-100	245	95	142	58	50.8	38.1	450	273	427	447	219	239	280	190	Ø20
S1-112	245	95	142	80	50.8	38.1	450	273	427	447	219	239	282	204	Ø20

S2

Model	X	Y	Z	E	XX	YY	A	B	C min	C max	D min	D max	M	N	P
S2-80	210	91	173.5	80	50.8	38.1	360	230	338	358	177	197	230	154	Ø16
S2-90	212	91	173.5	80	50.8	38.1	360	230	335	355	170	190	255	158	Ø16
S2-100	241	91	173.5	80	50.8	38.1	450	273	427	447	219	239	280	190	Ø20
S2-112	241	91	173.5	80	50.8	38.1	450	273	427	447	219	239	280	190	Ø20
S2-132	250	91	173.5	80	50.8	38.1	530	323	483	503	237	257	357	239	Ø20



S3

Model	X	Y	Z	E	XX	YY	A	B	C min	C max	D min	D max	M	N	P
S3-100	251	91.5	209	101	50.8	38.1	450	273	427	447	219	239	280	190	Ø20
S3-112	251	91.5	209	101	50.8	38.1	450	273	427	447	219	239	282	204	Ø20
S3-132	260	91.5	209	101	50.8	38.1	530	323	483	503	237	257	357	239	Ø20
S3-160	289	91.5	209	101	50.8	38.1	550	373	564	584	262	282	440	266	Ø20

S41

Model	X	Y	Z	E	XX	YY	A	B	C min	C max	D min	D max	M	N	P
S41-100	260	104	193	96	63.5	50.8	450	273	427	447	219	239	280	190	Ø20
S41-112	260	104	193	96	63.5	50.8	450	273	427	447	219	239	282	204	Ø20
S41-132	280	104	193	96	63.5	50.8	530	323	483	503	237	257	357	239	Ø20
S41-160	290	104	193	96	63.5	50.8	550	373	564	584	262	282	440	266	Ø20
S41-180	310	104	193	96	63.5	50.8	650	373	564	584	262	282	440	266	Ø20

S4

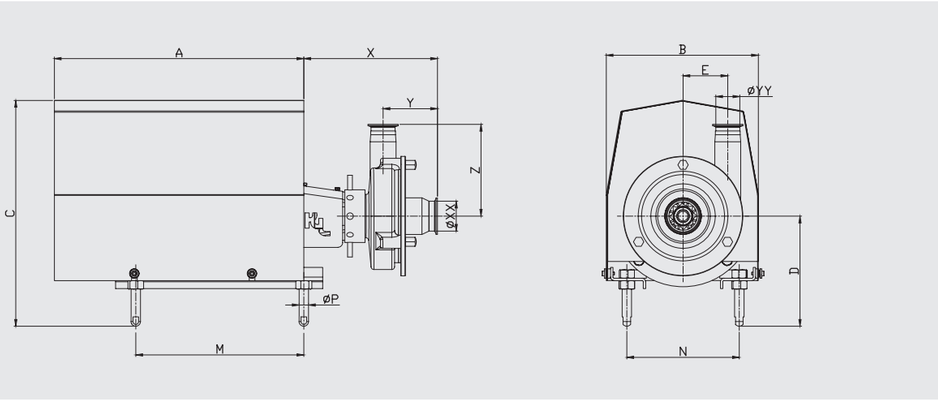
Model	X	Y	Z	E	XX	YY	A	B	C min	C max	D min	D max	M	N	P
S4-100	260	104	193	96	63.5	50.8	450	273	427	447	219	239	280	190	Ø20
S4-112	260	104	193	96	63.5	50.8	450	273	427	447	219	239	282	204	Ø20
S4-132	280	104	193	96	63.5	50.8	530	323	483	503	237	257	357	239	Ø20
S4-160	290	104	193	96	63.5	50.8	550	373	564	584	262	282	440	266	Ø20
S4-180	310	104	193	96	63.5	50.8	650	373	564	584	262	282	440	266	Ø20

S5

Model	X	Y	Z	E	XX	YY	A	B	C min	C max	D min	D max	M	N	P
S5-132	250	99	205	145	76.2	50.8	530	323	483	503	237	257	357	239	Ø20
S5-160	270	99	205	145	76.2	50.8	550	373	564	584	262	282	440	266	Ø20
S5-180	270	99	205	145	76.2	50.8	550	373	564	584	262	282	440	266	Ø20
S5-200	270	99	205	145	76.2	50.8	/	/	/	/	262	282	460	320	Ø25

S2D

Model	X	Y	Z	E	XX	YY	A	B	C min	C max	D min	D max	M	N	P
S2D-80	285	118	195	79	63.5	50.8	360	230	338	358	177	197	230	154	Ø16
S2D-90	285	118	195	79	63.5	50.8	360	230	335	355	170	190	255	158	Ø16
S2D-100	285	118	195	79	63.5	50.8	450	273	427	447	219	239	280	190	Ø20
S2D-112	285	118	195	79	63.5	50.8	450	273	427	447	219	239	280	190	Ø20
S2D-132	305	118	195	79	63.5	50.8	530	323	483	503	237	257	357	239	Ø20



S3D

Model	X	Y	Z	E	XX	YY	A	B	C min	C max	D min	D max	M	N	P
S3D-90	245	115.5	195	95	63.5	50.8	360	230	335	355	170	190	255	158	Ø16
S3D-100	266	115.5	195	95	63.5	50.8	450	273	427	447	219	239	280	190	Ø20
S3D-112	266	115.5	195	95	63.5	50.8	450	273	427	447	219	239	282	204	Ø20
S3D-132	286	115.5	195	95	63.5	50.8	530	323	483	503	237	257	357	239	Ø20
S3D-160	275	115.5	195	95	63.5	50.8	550	373	564	584	262	282	440	266	Ø20

S4D

Model	X	Y	Z	E	XX	YY	A	B	C min	C max	D min	D max	M	N	P
S4D-100	280	118	193	115	76.2	63.5	450	273	427	447	219	239	280	190	Ø20
S4D-112	280	118	193	115	76.2	63.5	450	273	427	447	219	239	282	204	Ø20
S4D-132	300	118	193	115	76.2	63.5	530	323	483	503	237	257	357	239	Ø20
S4D-160	315	118	193	115	76.2	63.5	550	373	564	584	262	282	440	266	Ø20
S4D-180	320	118	193	115	76.2	63.5	650	373	564	584	262	282	440	266	Ø20

S5D

Model	X	Y	Z	E	XX	YY	A	B	C min	C max	D min	D max	M	N	P
S5D-132	300	119	231	140	76.2	63.5	530	323	483	503	237	257	357	239	Ø20
S5D-160	320	119	231	140	76.2	63.5	550	373	564	584	262	282	440	266	Ø20
S5D-180	320	119	231	140	76.2	63.5	550	373	564	584	262	282	440	266	Ø20
S5D-200	320	119	231	140	76.2	63.5	/	/	/	/	262	282	460	320	Ø25
S5D-225	320	119	231	140	76.2	63.5	/	/	/	/	262	282	460	320	Ø25

C Series Sanitary Centrifugal Pumps

Application fields

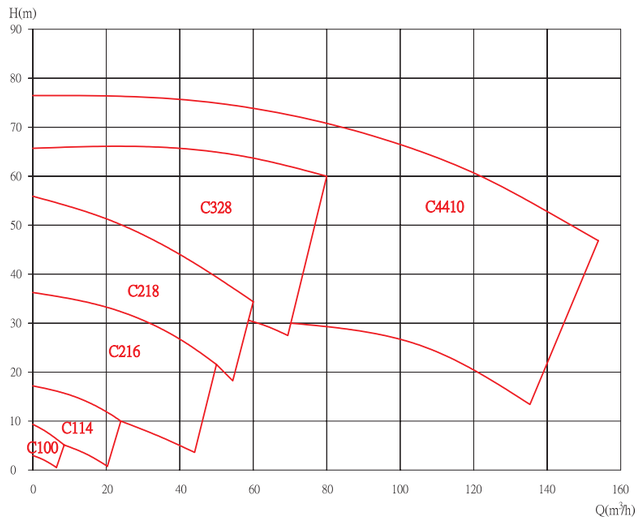
KL-C Series Sanitary Centrifugal Pumps are highly economical, cost-effective, and stable with a simple structure. Widely used in the industries of foods, beverages and dairy products, etc., the pumps are suitable for applications that require soft material processing and can ensure the completeness of materials to the maximum extent. As for C Series Sanitary Centrifugal Pumps, various types of mechanical seals are available, which are made of FDA-certified materials that conform to 3A sanitary standards.

There are altogether six models of KL-C Series Sanitary Centrifugal Pumps, i.e. C100, C114, C216, C218, C328 and C4410.

Structural design

- Made of 316L stainless steel sheet through integrated cold extrusion forming and butt welding, the pump case of KL-C Series features excellent strength and toughness.
- While achieving the minimum NPSH and noise level, the appropriate clearance between the impeller and the pump case is made to be suitable for fluids as viscous as possible.
- The simple front-mounting design and optimized mechanical seals can ensure failure-free operations for a longer time.
- Processed through CNC five-axis machining, the open-type cast impeller boasts high strength and processing accuracy.
- The groove design of the rolling spindle can effectively avoid "stagnant water", which is applicable to CIP system.

Model spectrum



Technical Parameter

Item	Parameter
Material	Steel parts of flow passage components: W. 1.4404(316L)
	Other steel parts: W. 1.4301(304)
	Surface treatment: Ra ⩽ 0.5μm
	Sealing elements of flow passage components: VITON,EPDM
Joint for flush-type spindle seal	6mm tube/1/8" (G thread) external thread
Motor	Motor with base flange; conforming to IEC metric standards; 2950RPM/380V/50Hz; protection grade: IP55; Temperature rise grade: F/B; Cooling mode: IC411; Working mode: S1; Energy efficiency rate: IE2
	Model: Standard motor with fixed ball bearing mounted on the drive end
Operating data	Max. inlet pressure: 1,000kPa (10 bar)
	Temperature: -10°C ~ 140°C (EPDM)
	Water consumption: 0.25-0.5L/min (flush-type double-end mechanical seal)
	Noise: 60-80dB(A), at 1m
	Head: 0-90m
	Flow rate: 180T/h

Options

A. Impeller with reduced diameter
B. Motor applicable to other voltage or frequency
C. Motor with higher safety/explosion-proof grade
D. Double-end mechanical seal
E. Discharge outlet: discharge from connector or discharge from diaphragm valve
F. Outlet direction of pump, see the following drawing:

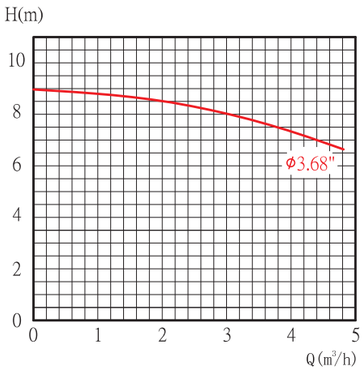
Order

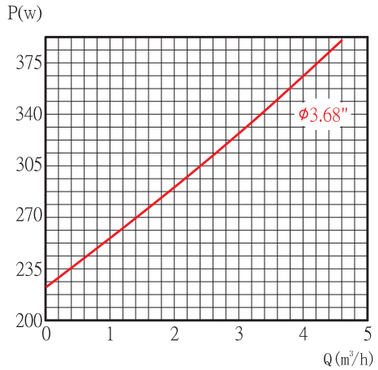
Please provide the following information in the order:

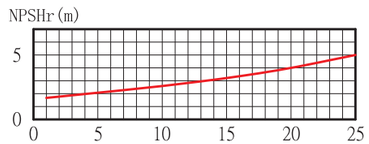
- Model of pump
- Connection: ferrule type, welded type, flanged type or threaded type
- Impeller diameter
- Rated power of motor
- Voltage and frequency
- Flow rate, pressure and temperature
- Density and viscosity of product
- Options

KL-C100

Medium	RPM	Frequency	Impeller diameter	Inlet dimension	Outlet dimension	Material
20±5°C clean water	2950RPM	50HZ	∅ 3.68"	∅ 1.5"	∅ 1.0"	316L/304

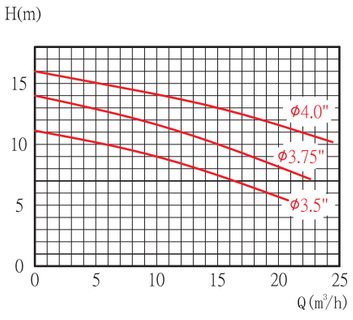


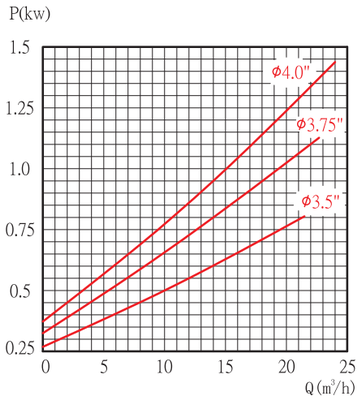


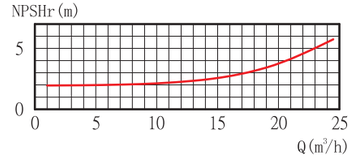


KL-C114

Medium	RPM	Frequency	Impeller diameter		Inlet dimension	Outlet dimension	Material
			Max.	Min.			
20±5°C clean water	2950RPM	50HZ	∅ 4"	∅ 3.5"	∅ 1.5"	∅ 1.5"	316L/304

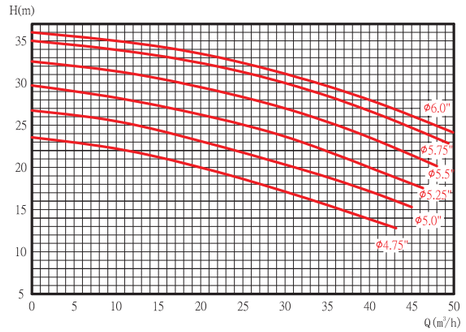


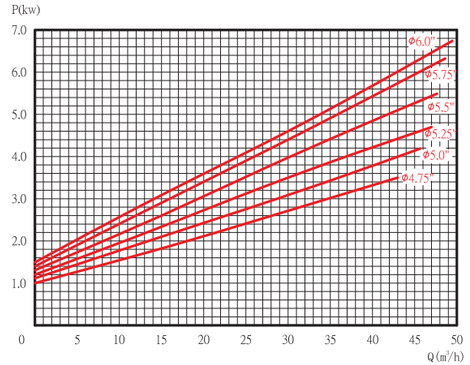


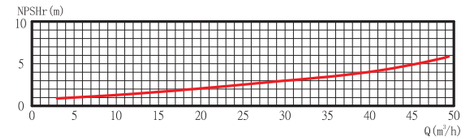


KL-C216

Medium	RPM	Frequency	Impeller diameter		Inlet dimension	Outlet dimension	Material
			Max.	Min.			
20±5°C clean water	2950RPM	50HZ	∅ 6"	∅ 4.75"	∅ 2.0"	∅ 1.5"	316L/304

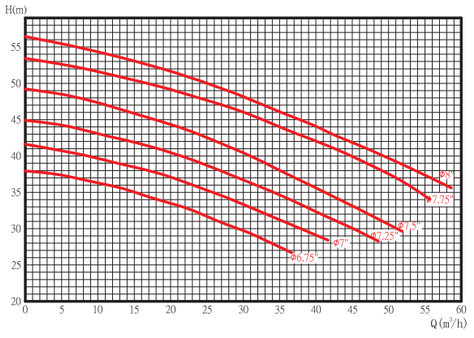


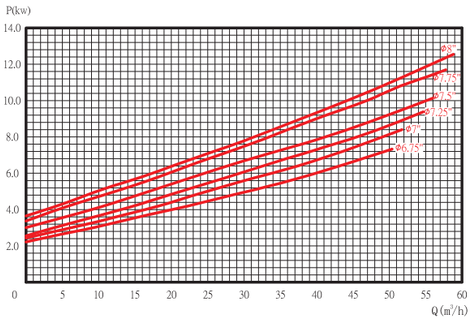


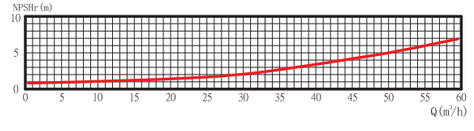


KL-C218

Medium	RPM	Frequency	Impeller diameter		Inlet dimension	Outlet dimension	Material
			Max.	Min.			
20±5°C clean water	2950RPM	50HZ	∅ 8"	∅ 6.75"	∅ 2.0"	∅ 1.5"	316L/304

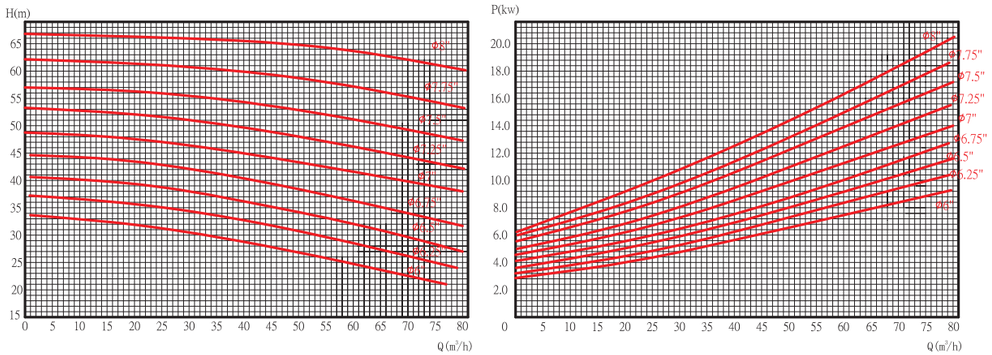






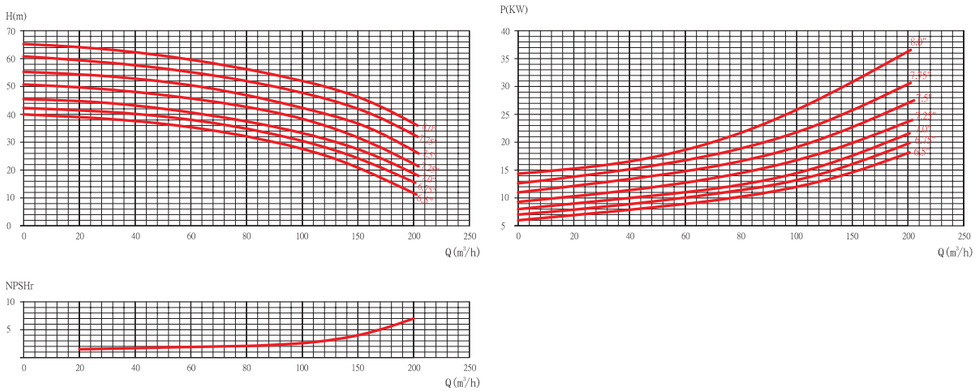
KL-C328

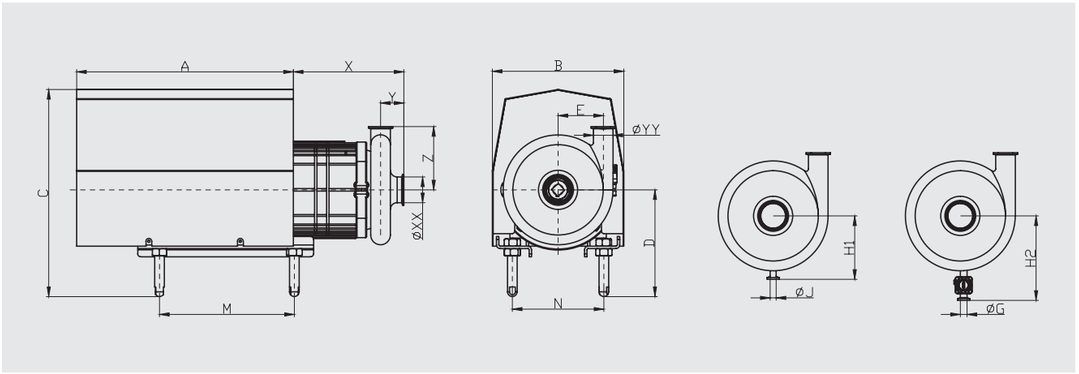
Medium	RPM	Frequency	Impeller diameter		Inlet dimension	Outlet dimension	Material
			Max.	Min.			
20±5℃ clean water	2950RPM	50HZ	∅ 8"	∅ 6"	∅ 3.0"	∅ 2.0"	316L/304



KL-C4410

Medium	RPM	Frequency	Impeller diameter		Inlet dimension	Outlet dimension	Material
			Max.	Min.			
20±5℃ clean water	2950RPM	50HZ	∅ 8"	∅ 6.5"	∅ 4"	∅ 4"	316L/304





C100

Dimension	Motor	
	0.37/0.55KW	0.75/1.1KW
X	85	77
Y	40	40
Z	89	89
E	35	35
XX	38	38
YY	25	25
A	300	360
B	210	223
C min	304	340
C max	319	355
D min	141	160
D max	156	175
M	180	230
N	144	154
J	12.7	12.7
G	19.1	19.1
H1	70	70
H2	137	137

C114

Dimension	Motor			
	0.75/1.1KW	1.5/2.2KW	3KW	4KW
X	180	182	180	179
Y	40	40	40	40
Z	92	92	92	92
E	67	67	67	67
XX	38	38	38	38
YY	38	38	38	38
A	360	360	450	450
B	223	223	273	273
C min	335	335	430	430
C max	355	355	450	450
D min	175	175	222	234
D max	195	195	242	254
M	230	255	280	282
N	154	158	190	204
J	12.7	12.7	12.7	12.7
G	19.1	19.1	19.1	19.1
H1	103	103	103	103
H2	170	170	170	170

C216

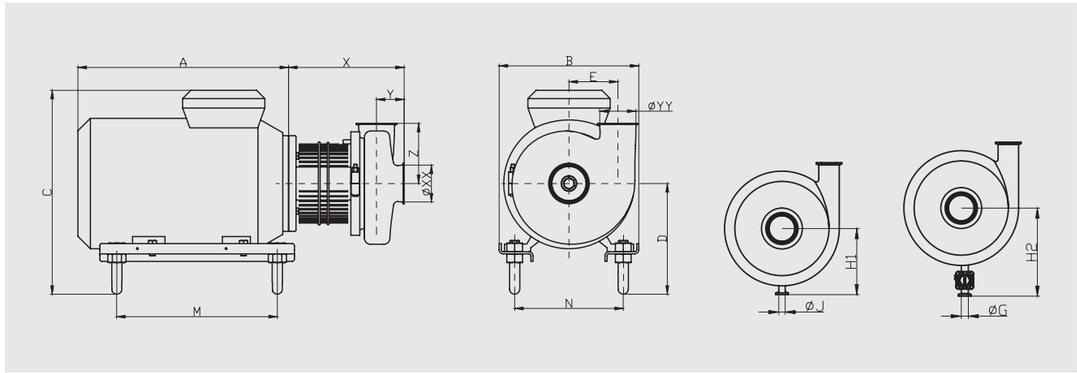
Dimension	Motor			
	1.5/2.2KW	3KW	4KW	5.5/7.5KW
X	184	229	228	228
Y	48	48	48	48
Z	114	114	114	114
E	94	94	94	94
XX	51	51	51	51
YY	38	38	38	38
A	360	450	450	530
B	223	273	273	323
C min	335	430	430	480
C max	355	450	450	500
D min	175	222	234	234
D max	195	242	254	254
M	255	280	282	357
N	158	190	204	239
J	12.7	12.7	12.7	12.7
G	19.1	19.1	19.1	19.1
H1	148	148	148	148
H2	215	215	215	215

C218

Dimension	Motor		
	4KW	5.5/7.5KW	11/15KW
X	191	227	260
Y	52	52	52
Z	140	140	140
E	119	119	119
XX	51	51	51
YY	38	38	38
A	450	530	550
B	273	323	373
C min	427	480	564
C max	447	500	584
D min	214	234	262
D max	234	254	282
M	282	357	440
N	204	239	266
J	12.7	12.7	12.7
G	19.1	19.1	19.1
H1	155	155	155
H2	222	222	222

C328

Dimension	Motor		
	5.5/7.5KW	11/15KW	18.5/22KW
X	233	265	254
Y	56	56	56
Z	140	140	140
E	120	120	120
XX	76	76	76
YY	51	51	51
A	530	550	700
B	323	373	388
C min	480	564	585
C max	500	584	605
D min	234	262	304
D max	254	282	324
M	357	440	439
N	239	266	279
J	12.7	12.7	12.7
G	19.1	19.1	19.1
H1	155	155	155
H2	222	222	222



C4410

Dimension	Motor				
	11/15/18.5KW	22KW	30/37KW	45KW	55KW
X	335	339	339	339	258
Y	81	81	81	81	81
Z	176	176	176	176	176
E	143	143	143	143	143
XX	101	101	101	101	101
YY	101	101	101	101	101
A	515	573	617	714	742
B	344	371	409	462	534
C min	515	557	597	664	709
C max	535	577	617	684	729
D min	262	304	324	350	375
D max	282	324	344	370	395
M	440	430	470	500	570
N	254	279	318	356	406
J	12.7	12.7	12.7	12.7	12.7
G	19.1	19.1	19.1	19.1	19.1
H1	196	196	196	196	196
H2	263	263	263	263	263

L Series Sanitary Self-priming Pumps

Application fields

Under conditions where the process medium contains gas, KL-L Series Self-priming Pumps are an ideal solution, as they can convey products containing air or bubbles. Therefore, except for sucking materials, these self-priming pumps can serve as the return pump for CIP systems or be used to exhaust the storage tanks.

There are six models of KL-L series self-priming pumps: L1, L2, L3, L4, L5, L6.

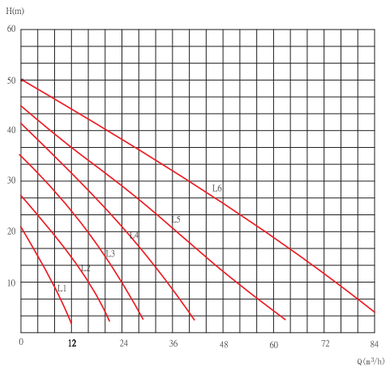
Structural design

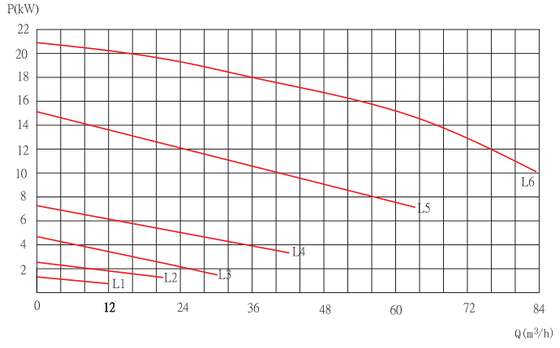
- L series self-priming pump with the advanced impeller design minimize recirculation and ensure the efficient transfer of energy.
- Minor gap between the pump casing and the impeller ensures high volume efficiency.
- It is shared with KL-S series sanitary high-efficiency centrifugal pump. It is designed with front moving ring load seal. Single and double mechanical seal maintenance requires simple disassembly of the pump cover and impeller without disassembling the pump casing.
- A variety of sealing materials and configurations can be chosen, adapt to different process and temperature, fully suitable for CIP, SIP systems.

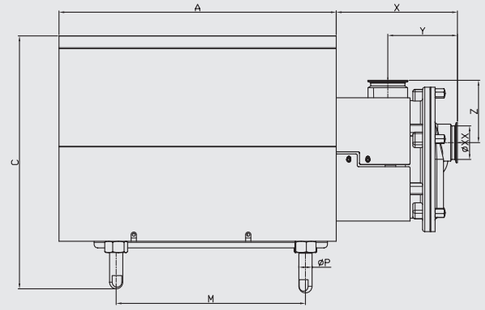
Technical Parameter

Item	Parameter
Material	Steel parts of flow passage components: W. 1.4404(316L)
	Other steel parts: W. 1.4301(304)
	Surface treatment: Ra ⩽ 0.8μm
	Sealing elements of flow passage components:VITON,EPDM
Joint for flush-type spindle seal	66mm tube/1/8" (G thread) external thread
Motor	Motor with base flange connection; Conforming to IEC metric standards; 3P; Inverter: 50Hz; 380V 1450rpm; Protection grade: IP55; Temperature rise grade: F/B; Cooling mode: IC411; Working mode: S1; Energy efficiency rate: IE3
	Model: standard motor with fixed ball bearing mounted on the drive end
Operating data	Max. inlet pressure: 500kPa (5 bar)
	Temperature: -20°C ~180°C
	Water consumption: 0.25-0.5L/min (flush-type double-end mechanical seal)
	Noise: <85dB，at 1m
	Suction head: 8m

Model	Medium	RPM	Frequency	Impeller diameter	Inlet dimension	Outlet dimension	Suction head	Material
L1	20±5°C clean water	1450RPM	50HZ	170mm	DN50	DN50	8M	316L/304
L2	20±5°C clean water	1450RPM	50HZ	170mm	DN50	DN50	8M	316L/304
L3	20±5°C clean water	1450RPM	50HZ	200mm	DN50	DN50	8M	316L/304
L4	20±5°C clean water	1450RPM	50HZ	200mm	DN50	DN65	8M	316L/304
L5	20±5°C clean water	1450RPM	50HZ	251mm	DN80	DN80	8M	316L/304
L6	20±5°C clean water	1450RPM	50HZ	265mm	DN80	DN80	8M	316L/304







Model	X	Y	Z	E	XX	YY	A	B	C	D	M	N	P
L1-80	211.7	136.8	109.7	62.5	50.8	50.8	350	223	337.2	198.4	255	158	16
L1-90	217.5	136.8	109.7	62.5	50.8	50.8	400	273	411	219	280	206	20
L2-100/112	217.5	136.8	109.7	62.5	50.8	50.8	400	273	411	219	282	204	20
L2-132	221.6	136.8	109.7	62.5	50.8	50.8	530	323.2	479.8	255	357	239	20
L3-132	233.3	132.2	119.7	78	50.8	50.8	530	323.2	479.8	285	357	239	20
L4-132	243.3	141	119.7	78	63.5	50.8	530	323.2	479.8	260.5	357	239	20
L4-160	266.6	141	119.7	78	63.5	50.8	550	373	564.2	285	440	266	20
L5-160	275.2	158.1	141.6	101	76.2	76.2	662	373	566.4	303.2	440	266	20
L6-160	268.2	159.2	150.7	100	76.2	76.2	662	373	566.4	293.8	440	266	20
L6-180	293.2	159.2	150.7	100	76.2	76.2	593	371	557.6	333.6	430	279	32
L6-200	293.2	159.2	150.7	100	76.2	76.2	638	409	598	354	470	318	32

J Series Sanitary Shearing Pumps

Application fields

KL-J Series Shearing Pumps are the best solutions for homogenization and emulsification, which are widely used in food and beverages like juice, jam, mashed potato, ice cream and CMC, etc. as well as the pharmaceutical engineering like tissue homogenization, injection and various ointments, etc. They can effectively mix heterogeneous products and output stable emulsified liquids after shearing teeth’s complete shearing and emulsification to prevent agglomeration and solidification.

There are altogether five models of KL-J Series Sanitary Shear Pumps, i.e. J1, J2, J3, J4 and J5.

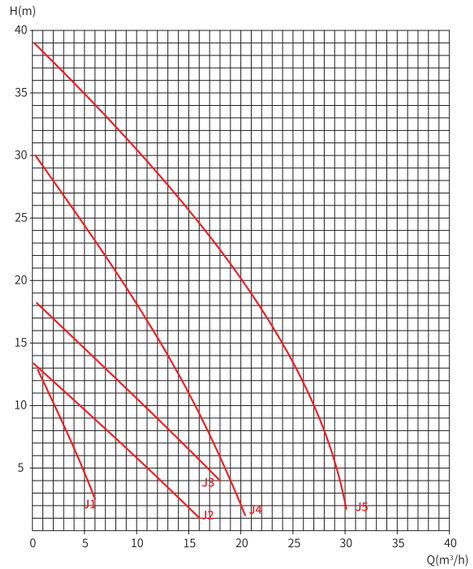
Structural design

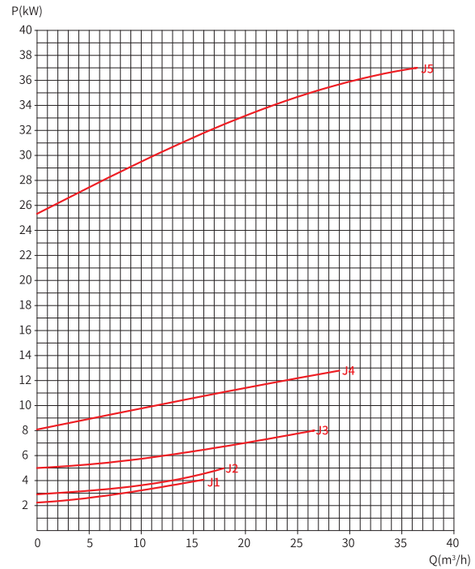
- A minimal design wall thickness of 6mm is adopted by the J Series Sanitary Shearing Pumps to ensure their stable performance in pressure resistance, vibration and shock, etc., thus providing the best guarantee for their efficient and trouble-free operations.
- The clearance between the rotor or stator and the pump case is always 0.5mm, and the shearing teeth are arranged reversely to the cutter point to produce gas explosion effect, which can realize further shearing and breaking of materials at the rear part of the shearing teeth, thus ensuring sharing effect and medium heterogeneity.
- The surface roughness of the pump chamber, rotor, stator and other parts in contact with liquids is below Ra0.5μm, to avoid bacteria or hazardous substance contamination in tiny spaces.

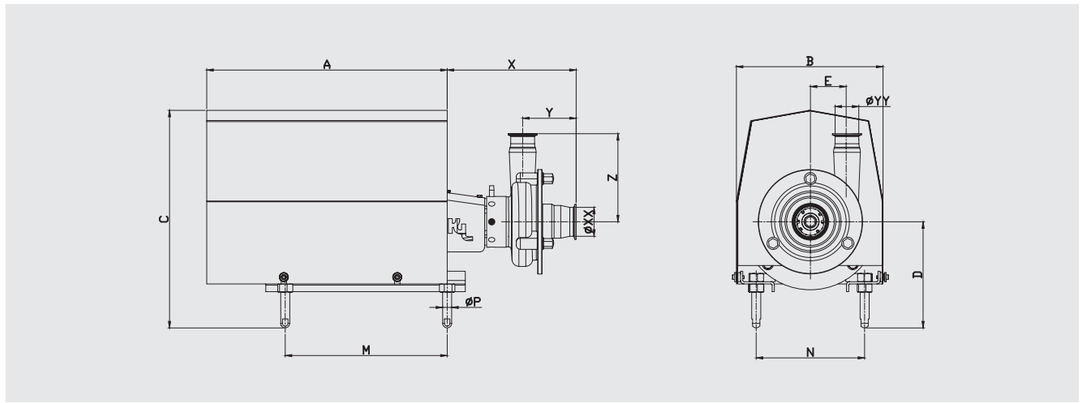
Technical Parameter

Item	Parameter
Material	Steel parts of flow passage components: W. 1.4404(316L)
	Other steel parts: W. 1.4301(304)
	Surface treatment: Ra ⩽ 0.5μm
	Sealing elements of flow passage components: VITON,EPDM
Joint for flush-type spindle seal	6mm tube/1/8" (G thread) external thread
Motor	ABB B35 series motor with base flange connection; conforming to IEC metric standards; 3P; 50Hz; Protection grade: IP55
	Model: standard motor with fixed ball bearing mounted on the drive end
Operating data	Max. inlet pressure: 800kPa (8bar)
	Temperature: -20°C ~180°C
	Water consumption: 0.25~0.5L/min (flush-type double-end mechanical seal)
	Noise: 60-80dB(A), at 1m
	Head: 0-39m
	Flow rate: 0-30T/h

Model	Medium	RPM	Frequency	Rotor diameter	Inlet	Outlet	Material
J1	20±5°C clean water	2900r/min	50Hz	Ø117	DN40	DN25	316L/304
J2	20±5°C clean water	2900r/min	50Hz	Ø 145	DN65	DN50	316L/304
J3	20±5°C clean water	2900r/min	50Hz	Ø 175	DN65	DN50	316L/304
J4	20±5°C clean water	2900r/min	50Hz	Ø200	DN80	DN65	316L/304
J5	20±5°C clean water	2900r/min	50Hz	Ø250	DN80	DN65	316L/304







J1 ABB M2BAX 90°

Model	X	Y	Z	E	XX	YY	A	B	C min	C max	D min	D max	M	N	P
J1-100	245	95	142	58	38.1	25.4	450	273	427	447	219	239	280	190	Ø20
J1-112	245	95	142	80	50.8	38.1	450	273	427	447	219	239	282	204	Ø20
J1-132	250	95	142	80	50.8	38.1	530	323	483	503	237	257	357	239	Ø20

J2 ABB M2BAX 90°

Model	X	Y	Z	E	XX	YY	A	B	C min	C max	D min	D max	M	N	P
J2-100	285	118	195	79	63.5	50.8	450	273	427	447	219	239	280	190	Ø20
J2-112	285	118	195	79	63.5	50.8	450	273	427	447	219	239	280	190	Ø20
J2-132	305	118	195	79	63.5	50.8	530	323	483	503	237	257	357	239	Ø20
J2-160	335	118	195	79	63.5	50.8	550	373	564	584	262	282	440	266	Ø20

J3 ABB M2BAX 90°

Model	X	Y	Z	E	XX	YY	A	B	C min	C max	D min	D max	M	N	P
J3-132	246	78	195	95	63.5	50.8	530	323	483	503	237	257	357	239	Ø20
J3-160	275	78	195	95	63.5	50.8	550	373	564	584	262	282	440	266	Ø20

J Series Sanitary Shearing Pumps—
Installation Dimensions

J4 ABB M2BAX 90°

Model	X	Y	Z	E	XX	YY	A	B	C min	C max	D min	D max	M	N	P
J4-132	300	118	193	115	76.2	63.5	530	323	483	503	237	257	357	239	Ø20
J4-160	315	118	193	115	76.2	63.5	550	373	564	584	262	282	440	266	Ø20
J4-180	320	118	193	115	76.2	63.5	650	373	564	584	262	282	440	266	Ø20

J5 ABB M2BAX 90°

Model	X	Y	Z	E	XX	YY	A	B	C min	C max	D min	D max	M	N	P
J5-160	320	119	231	140	76.2	63.5	530	323	483	503	237	257	357	239	Ø20
J5-180	320	119	231	140	76.2	63.5	550	373	564	584	262	282	440	266	Ø20
J5-200	320	119	231	140	76.2	63.5	/	/	/	/	262	282	460	320	Ø25
J5-225	320	119	231	140	76.2	63.5	/	/	/	/	262	282	460	320	Ø25

R Series Rotor Pumps

The Design

- The R-Series Rotor Pumps feature an innovative, non-contact, counter-reversing cam rotor design with a face seal between the rotor, pump housing and pump cover.
- The line seal between the rotors, through high-precision machining, forms a perfect seal area while at low viscosity and high temperatures
- The symmetrical design of the rotor makes the direction of rotation of the pump reversible. The design of the rotor also takes full account of the protection product.
- It also enables efficient operation. It will not be over-squeezed.

The Features

- Traffic: 0-77m3/h
- The maximum outlet pressure: 12bar
- The highest delivery viscosity: 100,000mPas
- Applicable to CIP/SIP
- Optional heating/cooling jacket
- Optional single seal, double seal, with flush seal.
- Easy to dismantle and easy to maintain.

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Specifications

R system	R1	R2	R2D	R3	R3D	R4	R4D	R5	R5D
L / Turn	0.02L	0.1L	0.15L	0.27L	0.37L	0.67L	1.04L	1.76L	2.4L
Maximum outlet pressure	9bar	9bar	8bar	12bar	8bar	12bar	8bar	12bar	8bar
Maximum flow	2.3m^3/h	7m^3/h	10m^3/h	15m^3/h	20m^3/h	30m^3/h	45m^3/h	70m^3/h	80m^3/h
Maximum speed	900rpm	900rpm	900rpm	700rpm	700rpm	600rpm	600rpm	400rpm	400rpm
Inlet/outlet size	DN20	DN25	DN40	DN40	DN50	DN50	DN80	DN80	DN100
Highest delivery viscosity	100000mPas								

Industrial application

- **Food Industry:** Tomato Concentrate, Fruit Juice, Fat, Jam, Mashed Potato, Mustard Paste, Ice Cream, Chocolate Milk, etc.
- **Dairy industry:** Dairy products, yogurt, butter, creamer, soft cheese, butter, etc.
- **Pharmaceutical industry:** pill paste, syrup, soft ointment, antibiotics, etc.
- **Daily chemical industry:** Lipsticks, creams and lotions, face creams, toothpastes, skin care products, etc.
- **Chemical industry:** resin, resin emulsification, polymers, various emulsions, emulsions, auxiliaries, etc.

Product		Proportion	Viscosity
Acetic acid	5% 10% 50% 80%	1.01 1.01 1.06 1.08	 31.7 SSU@15°C 33 SSU@15°C 35 SSU@15°C
Animal fat		0.9	130 SSU@46°C 50 SSU@93°C
Barbecue		1.05	11,555 SSU@4-24°C
Beer		1.02	32 SSU@20°C
Animal Blood		.93-.98	15,000 SSU@13°C
Butter		.93-.98	15,000 SSU@13°C 440 SSU@32°C 220 SSU@46°C
Coconut oil		0.92	125 SSU@41°C
Corn Oil		0.92	135 SSU@54°C 54 SSU@100°C
Corn starch solution	22 Baume	1.18	150 SSU@21°C 130 SSU@38°C
	24 Baume	1.2	600 SSU@21°C 440 SSU@38°C
	25 Baume	1.21	1400 SSU@21°C 800 SSU@38°C
Cottage cheese		1.02	4300 SSU
Dressing			
Cream（Sweet）		1 .99 .99	73 SSU 140 SSU 215 SSU
Egg yolk		1.12	21,500 SSU@1.7°C
Gelatin		1.01	1,380-2,580 SSU@71°C
Glucose		1.35-1.44	35M-100M SSU@38°C 4M-11M SSU@65.5°C
Honey		1.3	1250 1425 SSU@38°C
Ice Cream		1.15	1050 SSU@ °C
Lard		0.96	287 SSU@38°C
Linseed Oil		.92-.94	143 SSU@38°C 93 SSU@54.5°C
Malt Syrup		1.41	85,400 SSU@25°C
Maple Syrup		1.37	2,000 SSU@ °C
Margarine		0.93	13,900 SSU@29°C
Milk		1.02-1.05	31.5 SSU@20°C
Molasses	A. First	1.4-1.46	1300-23,500 SSU@38°C 700-8160 SSU@54°C
	B. Second	1.43-1.48	6535-61,180 SSU@38°C 3058-61,180 SSU@54°C
	C. Third	1.46-1.49	12,190-255M SSU@38°C
Mustard		1	17,000 SSU@29.4°C
Olive Oil		.91-.92	200 SSU@38°C
Peanut Butter		1.2	77,400 SSU@43-60°C
Sesame Seeds Oil		0.92	184 SSU@38°C 100 SSU@54°C
Soy Bean Oil		0.91	500 SSU@7°C
Tomato paste		1.14	60M-80M SSU 21M SSU@approx.
Water		1	31 SSU@20°C

The following table shows the loss due to friction.
Loss of Each Pipe or Pipe Passing Through Stainless Steel Pipe Fittings and Stainless Steel Pipe

Friction Table for Loss of Pipe Fittings and Fittings for Food outside Diameter

m^3/hr. Capacity	Outer Diameter Pipe Size																	
	1″ ID=0.870″			1-1/2″ ID=1.370″			2″ ID=1.870″			2-1/2″ ID=2.370″			3″ ID=2.870″			4″ ID=3.834″		
	Tube	Elbow	Tee	Tube	Elbow	Tee	Tube	Elbow	Tee	Tube	Elbow	Tee	Tube	Elbow	Tee	Tube	Elbow	Tee
0.5	0.01	0.003	0.030															
1.0	0.025	0.006	0.061															
1.1	0.035	0.008	0.076															
2.3	0.12	0.018	0.021	0.02	0.003	0.045	0.005	0.005	0.030									
3.4	0.25	0.030	0.242	0.04	0.006	0.076	0.013	0.006	0.045									
4.5	0.43	0.067	0.455	0.06	0.009	0.091	0.02	0.008	0.061	0.005	0.006	0.030	0.003	0.006	0.018			
5.7	0.66	0.021	0.697	0.08	0.012	0.121	0.025	0.009	0.076	0.006	0.009	0.045	0.004	0.009	0.024			
6.8	0.93	0.212	1.000	0.105	0.018	0.167	0.035	0.015	0.091	0.008	0.015	0.061	0.005	0.012	0.030			
8.0	1.22	0.379	1.576	0.135	0.027	0.242	0.04	0.018	0.121	0.011	0.018	0.076	0.006	0.015	0.039			
9.1				0.17	0.033	0.303	0.05	0.024	0.152	0.015	0.021	0.091	0.007	0.018	0.045			
10.2				0.21	0.048	0.394	0.063	0.030	0.182	0.02	0.027	0.106	0.008	0.020	0.055			
11.4				0.25	0.061	0.485	0.073	0.036	0.212	0.022	0.030	0.121	0.01	0.021	0.061			
13.6				0.34	0.106	0.667	0.1	0.055	0.273	0.03	0.036	0.136	0.015	0.024	0.076			
18.2				0.57	0.230	1.121	0.16	0.091	0.455	0.05	0.045	0.167	0.02	0.030	0.121			
22.7				0.85	0.409	1.758	0.23	0.133	0.697	0.075	0.055	0.182	0.03	0.033	0.152	0.008	0.012	0.030
27.3				1.18	0.621	2.758	0.32	0.194	1.000	0.105	0.064	0.303	0.04	0.039	0.182	0.01	0.015	0.045
31.8							0.42	0.258	1.364	0.14	0.070	0.379	0.05	0.048	0.242	0.013	0.018	0.061
36.4							0.54	0.342	1.758	0.17	0.085	0.485	0.07	0.061	0.333	0.015	0.021	0.076
40.9							0.67	0.439	2.242	0.205	0.094	0.606	0.08	0.064	0.394	0.02	0.024	0.091
45.5							0.81	0.552	2.727	0.245	0.106	0.758	0.1	0.079	0.485	0.025	0.027	0.121

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NOTE

Friction Table for Loss of Pipe Fittings and Fittings for Food outside Diameter

在 m^3/hr. Capacity	Outer Diameter Pipe Size																	
	1″ ID=0.870″			1-1/2″ ID=1.370″			2″ ID=1.870″			2-1/2″ ID=2.370″			3″ ID=2.870″			4″ ID=3.834″		
	Tube	Elbow	Tee	Tube	Elbow	Tee	Tube	Elbow	Tee	Tube	Elbow	Tee	Tube	Elbow	Tee	Tube	Elbow	Tee
50.5							0.95	0.673	3.333	0.29	0.124	0.909	0.12	0.091	0.576	0.028	0.030	0.152
54.5										0.39	0.161	1.364	0.165	0.118	0.758	0.04	0.035	0.182
63.6										0.45	0.185	1.606	0.19	0.127	0.848	0.045	0.036	0.197
68.2										0.515	0.212	1.879	0.22	0.152	0.939	0.05	0.039	0.212
79.5										0.68	0.318	2.576	0.28	0.203	1.242	0.07	0.045	0.273
90.9										0.86	0.470	3.333	0.36	0.267	1.576	0.85	0.055	0.364
102.3										1.05	0.682	4.091	0.44	0.333	2.000	0.105	0.061	0.455
113.6													0.54	0.424	2.424	0.13	0.070	0.530
125.0													0.64	0.515	2.879	0.15	0.082	0.636
136.4													0.75	0.621	3.091	0.175	0.091	0.758
147.7													0.87	0.730	3.939	0.2	0.103	0.848
159.1													1.0	0.848	4.545	0.23	0.121	1.030
170.5																0.26	0.130	1.152
181.8																0.3	0.152	1.333
193.2																0.33	0.170	1.515
204.5																0.37	0.188	1.727
215.9																0.41	0.212	1.909
227.3																0.45	0.242	2.121
250.0																0.53	0.321	2.606

NOTE

NOTE