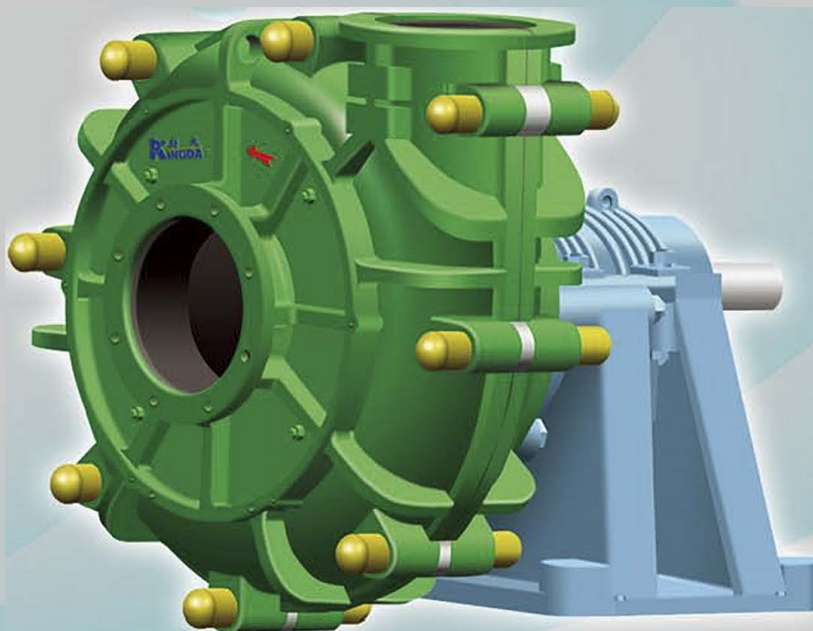


# KSH



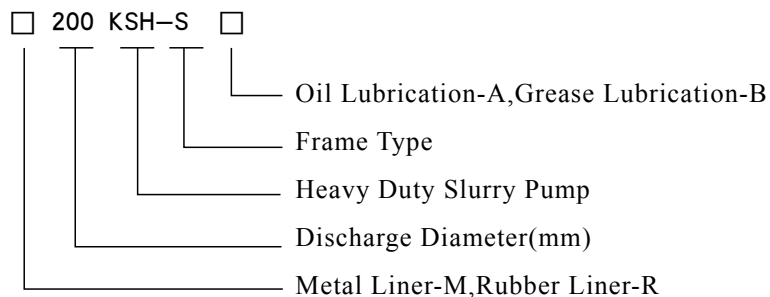
# KSH

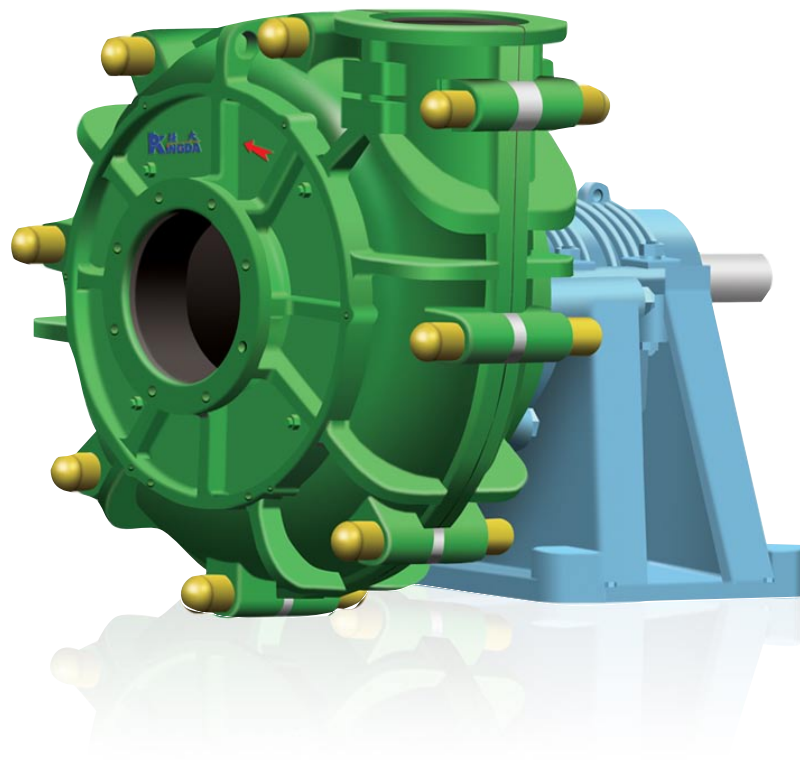
## — General

Kingda has the successful experience of many years in the making and application of slurry pump. Meanwhile, based on the advanced technology of international, Kingda formed complete product series covering full range for the application.

Recent years, Kingda has developed the Third-Generation of KSH Series Slurry Pump by using CFD and CAE Design Software. KSH series pump can be applied for metallurgy, mines, power plants and chemical industry. This series pump features of reasonable construction, high efficiency, reliable operation, long service life.

## ≡ Notation





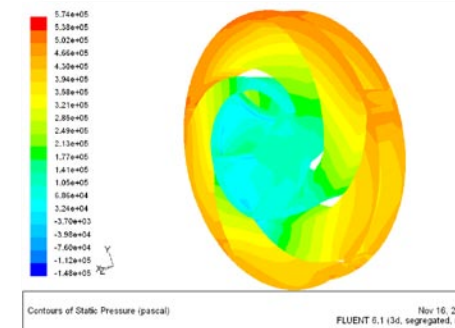
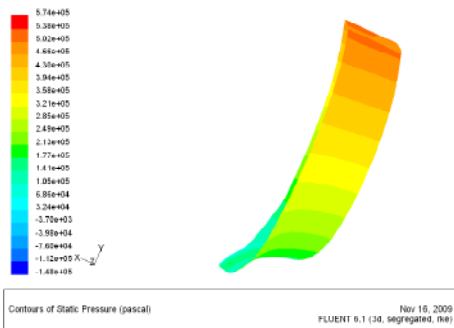
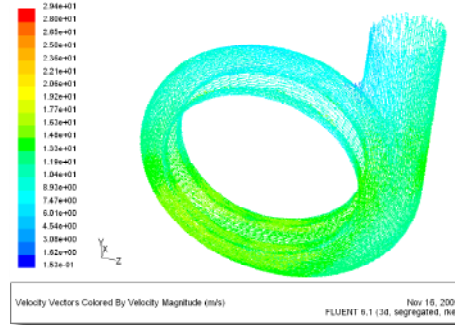
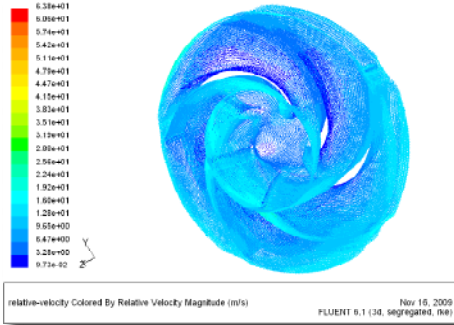
### Application And Feature

Type KSH pumps are cantilevered, horizontal, centrifugal slurry pumps. They are designed for the handling of abrasive, high density slurries in the metallurgical, mining, coal, power, building material and other industrial departments, etc. The pumps of this type also may be installed in multistage series.

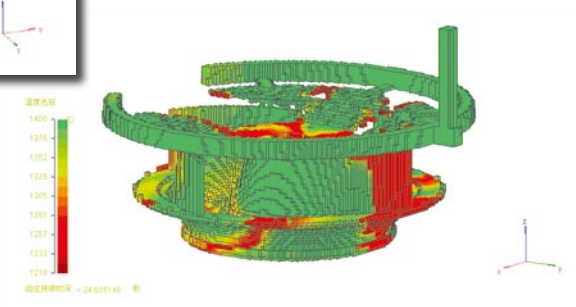
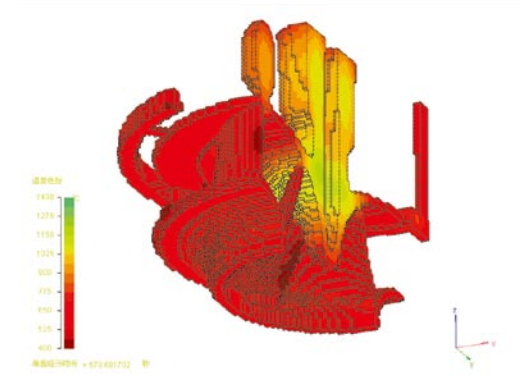
The frame plates for type KSH pumps have interchangeable, hard metal or pressure moulded elastomer liners. The impellers are made of hard metal or pressure moulded elastomer liners.

The shaft seals for type KSH pumps can be packing seal, centrifugal seal or mechanical seal. The discharge branch can be positioned at intervals of 45 degrees by request and oriented to any eight positions to suit installations and applications.

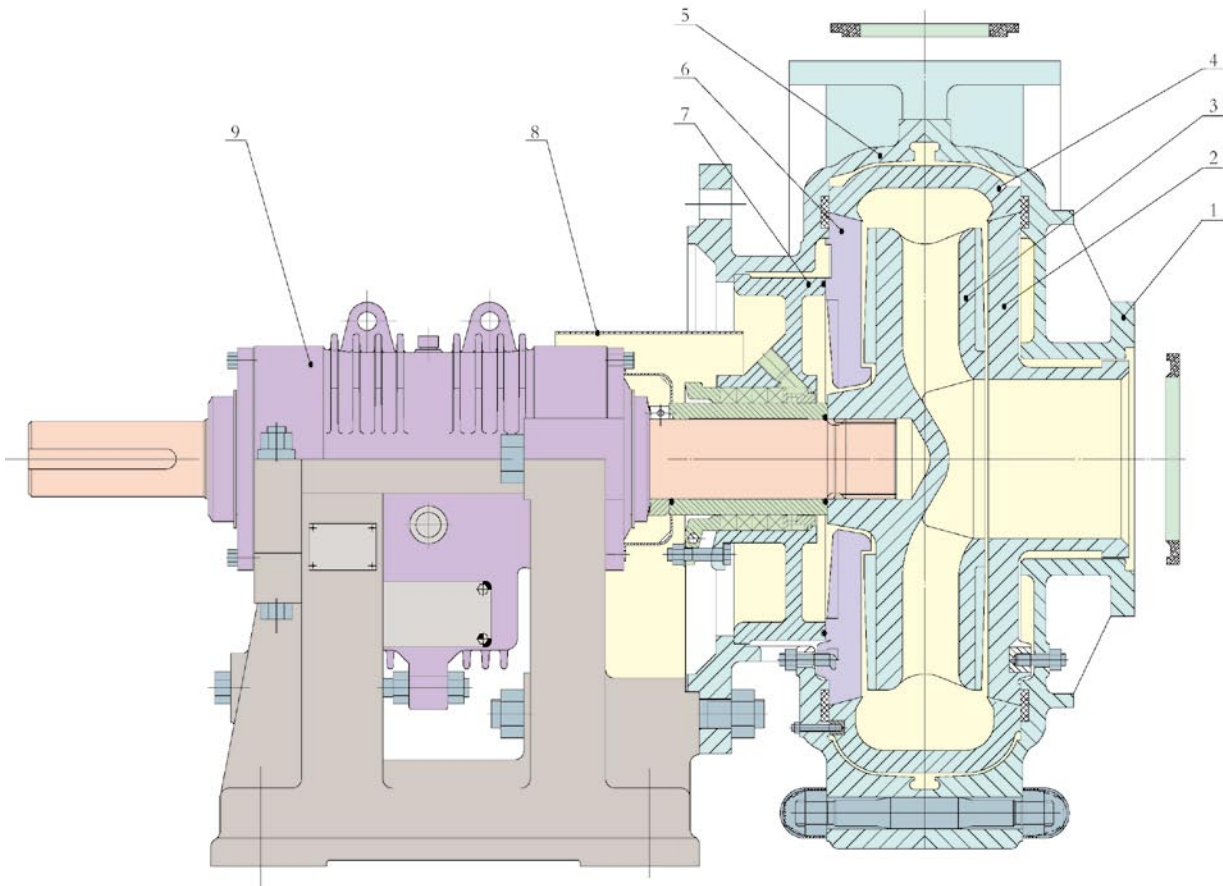
# CFD Technique Application



# CAE Technique Application



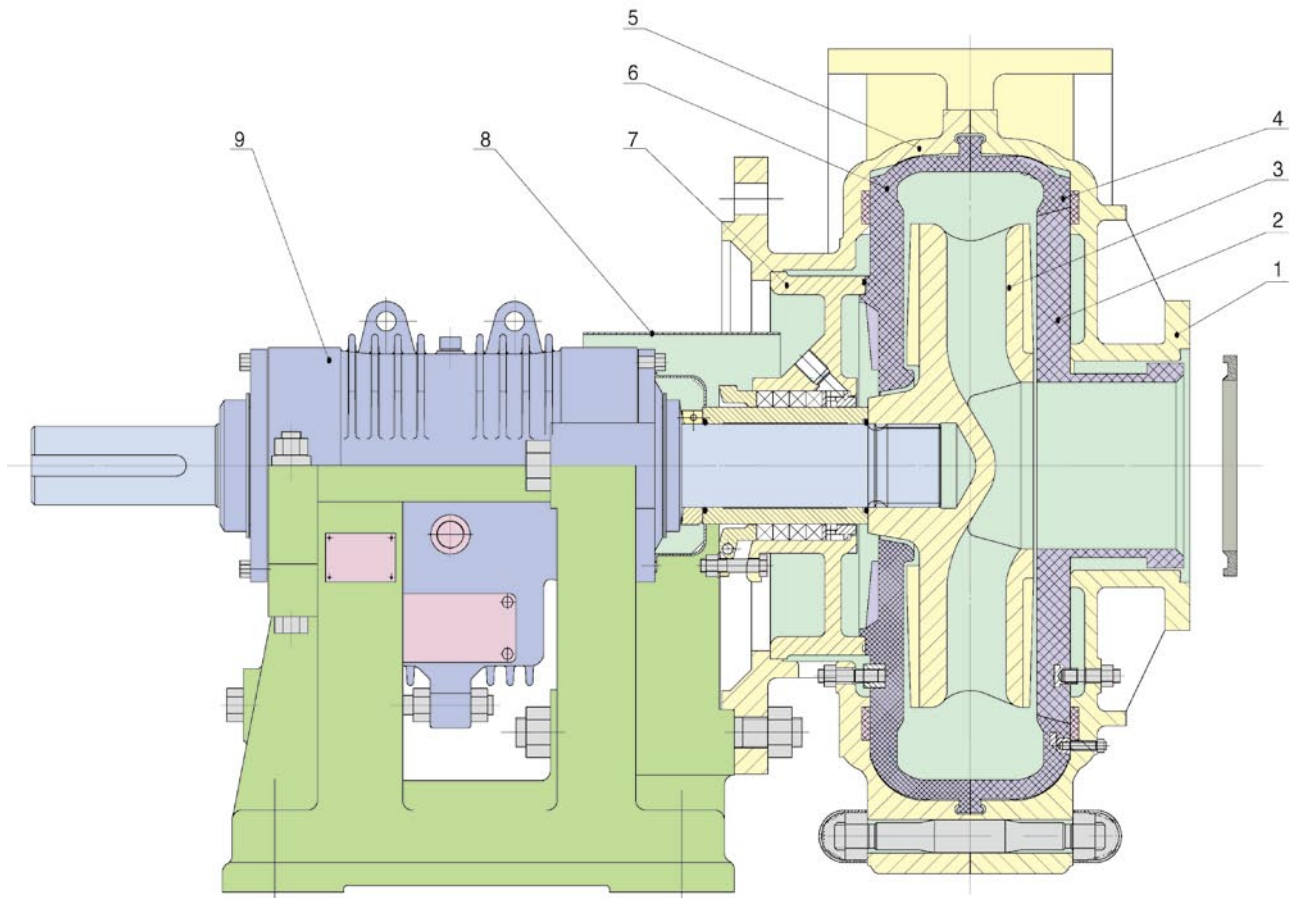
## Construction Design



## Metal Liner Slurry Pump

- |   |                  |
|---|------------------|
| 1 | Cover Plate      |
| 2 | Front Liner      |
| 3 | Impeller         |
| 4 | Liner            |
| 5 | Frame Plate      |
| 6 | Rear Liner       |
| 7 | Stuffing Box     |
| 8 | Waterproof Cover |
| 9 | Bearing Assembly |

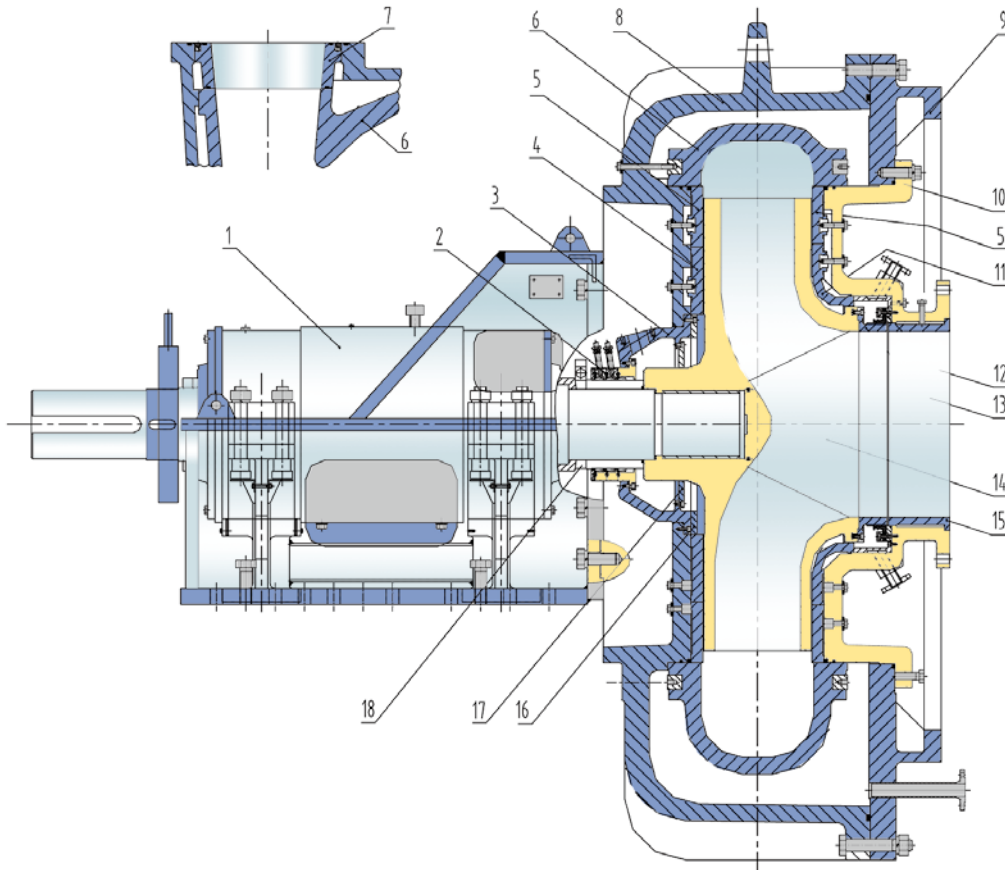
## Construction Design



## Rubber Liner Slurry Pump

- |   |                  |
|---|------------------|
| 1 | Cover Plate      |
| 2 | Front Liner      |
| 3 | Impeller         |
| 4 | Liner            |
| 5 | Frame Plate      |
| 6 | Rear Liner       |
| 7 | Stuffing Box     |
| 8 | Waterproof Cover |
| 9 | Bearing Assembly |

## Construction Desing



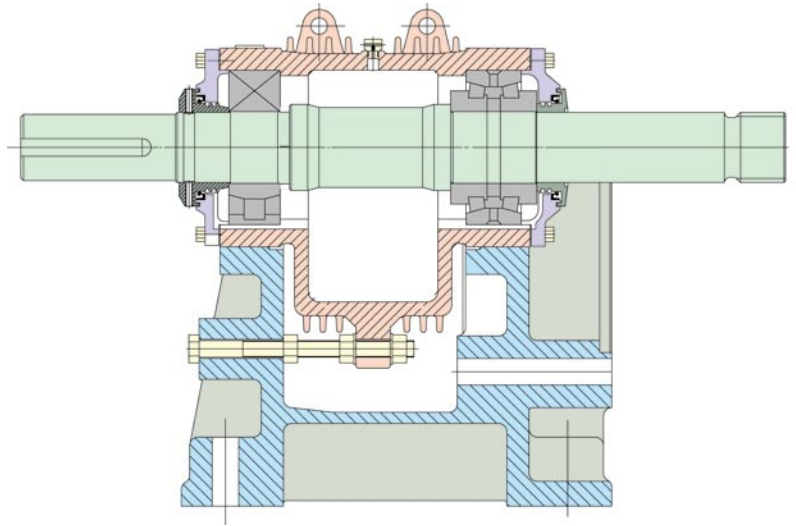
### KSH600~1000

### The Construction of KSH 600~1000 Slurry Pump

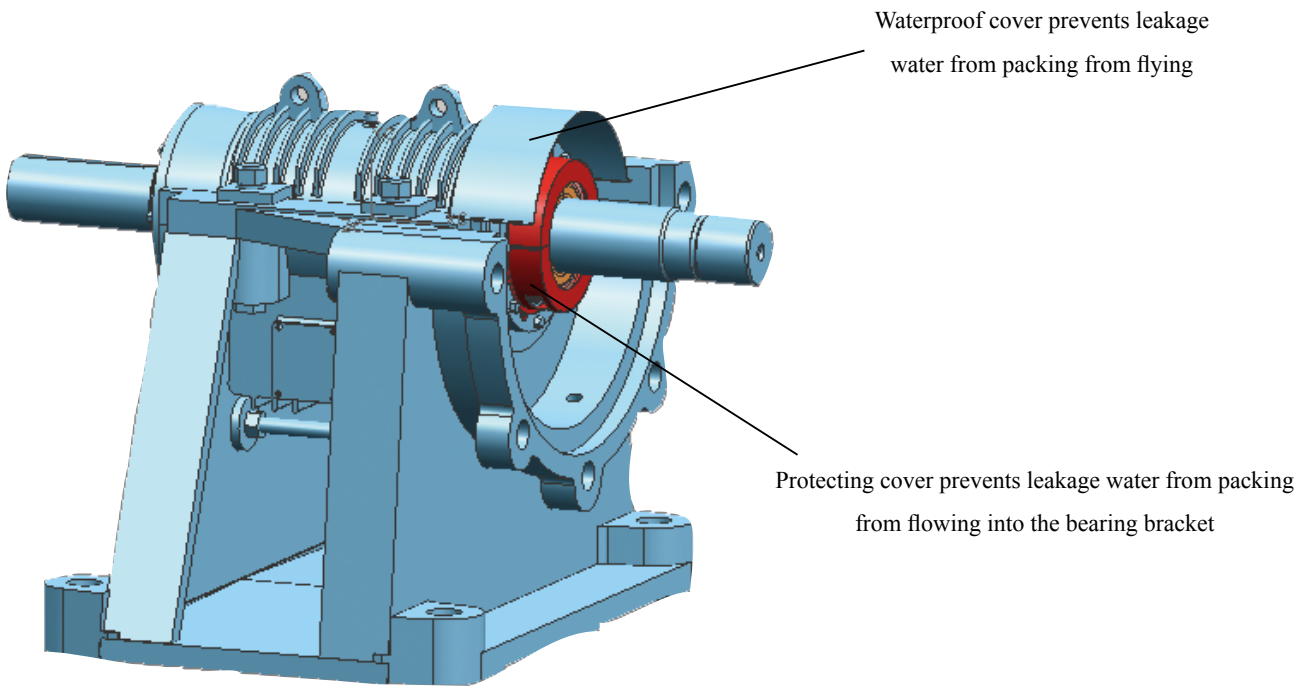
1、	Bracket	7、	Discharge Liner Tube	13、	Resistant Wear Ring
2、	Sealing Assy	8、	Pump Casing	14、	Impeller
3、	Sealing Box	9、	Big Pump Cover	15、	Suction Line Tube
4、	Rear Liner	10、	Small Pump Cover	16、	Protecting Ring of Sealing Box
5、	Shoulder Ring	11、	Front Liner	17、	Resistant Sand Plate
6、	Liner	12、	Water Sleeve	18、	Impeller Disassembly Ring

## Transmission Module Design

Large diameter of pump shaft, cylindrical construction of heavy load, metric bearing using oil lubrication or grease lubrication; operated in serial, the construction features of small volume and high reliability.



Innovative cylindrical bearing assembly using oil lubrication



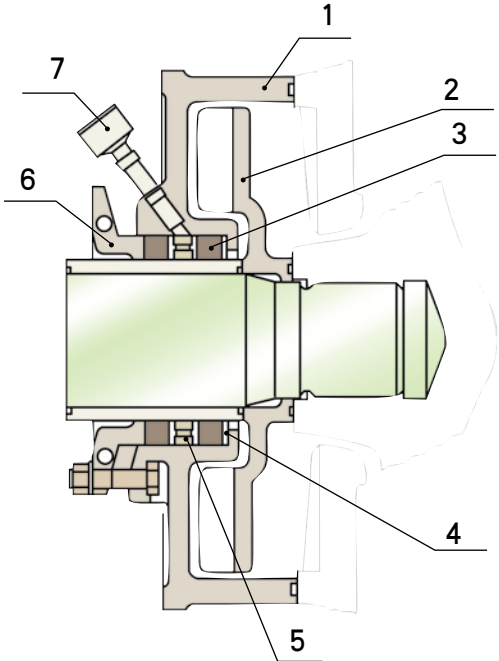


Type KSH slurry pump adopt many kinds of sealing systems: expeller dynamic seal, packing seal, mechanical seal and all sorts of special combined seals.

Expeller dynamic seal

Use pressure seal produced by impeller and expeller in series, packing or lip sealing ring for shut down seal.

### Shaft Seal Module Design

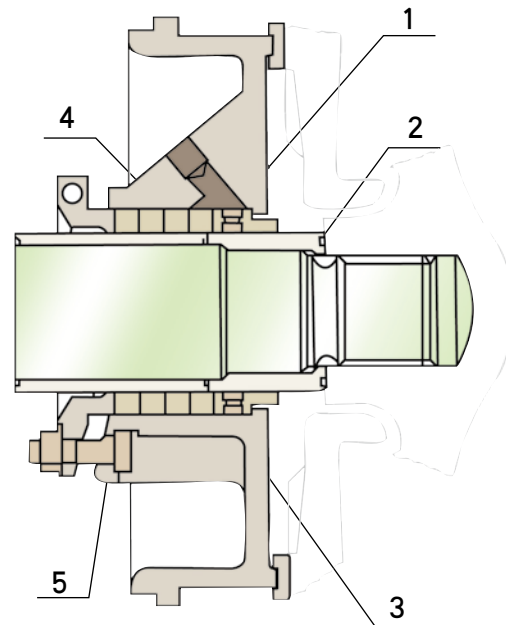


1	Release Gland
2	Expeller
3	Packing
4	Packing Gasket
5	Lantern Ring
6	Packing Gland
7	Oil Cup

Expeller Seal

## Packing Seal

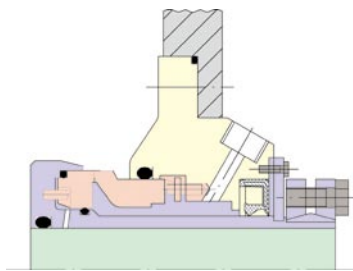
The routine sealing systems are suitable for various conditions and can be used in the corrosive or high temperature conditions such as polytetrafluoroethylene packing, graphite packing and etc. It also can be used in strong abrasive condition duty with shaft ceramic sleeve or spray weld.



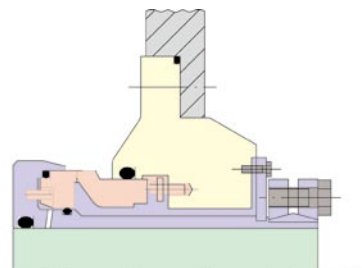
Packing Seal

1	Packing Box
2	Front Lantern Ring
3	Packing
4	Packing Gland
5	Shaft Sleeve

## Shaft Seal Module Design



GRJ Mechanical Seal



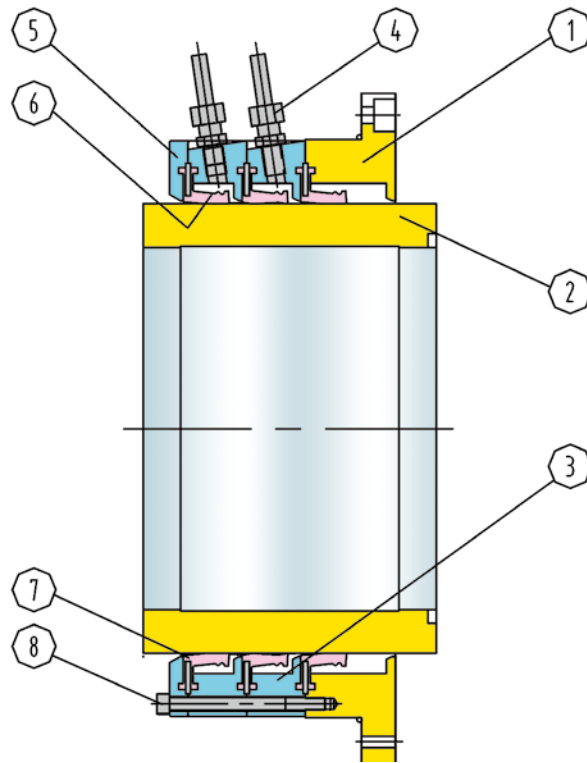
HRJ Mechanical Seal

## Mechanical Seal

World-advanced sealing technique without sealing leakage, integrating construction, convenient installation & replacement, various constructions suit for all kinds of conditions. High hardness ceramic and alloy are adopted for material of friction parts. Design & matching of mechanical seal & sealing box is suitable for fluid state. It possesses high abrasive resistance & shakeproof to guarantee that sealing effect can be satisfied by customers in various conditions.

## Helix L Rubber Sealing

The shaft seal of KSH600~1000 surry pump is spirial L shape rubber seal,which consists of 3 L-shape seal ring and 1 shaft sleeve with special thread.

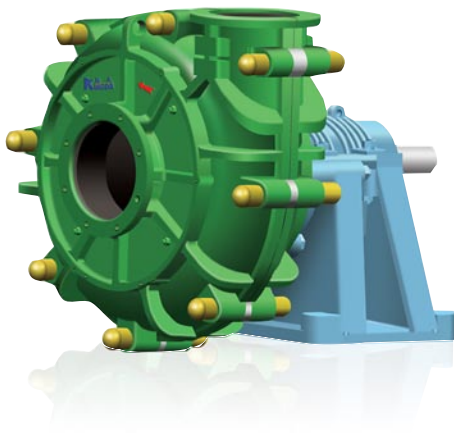


Helix L Rubber Sealing

1、	Flange End Cover	5、	Gland
2、	Shaft Sleeve	6、	Spring
3、	Sealing Ring Pad	7、	Sealing Ring
4、	Pipe Nipple	8、	Screw

Type	Material Code	Material Brand	Mechanical Property			Special Performance	Application
			$\delta w / \delta b$ (MPa)	$a_k$ (J/cm <sup>2</sup> )	HRC		
Anti-wear white iron	KB04	KmTBCr26	$\geq 700$	6-7	$\geq 56$	The erode resistance is a little bit lower than KB05 with certain corrosive resistance.	Used for higher wear condition with pH between 5 and 12.
	KB06	KmTBCr15Mo	$\geq 550$	4-8	$\geq 59$	Best erode resistance but lower wear resistance than KB03 and KB04.	Used for higher wear condition.
	KB01	KmTBCr8	$\geq 550$	6-8	$\geq 55$	The erode resistance is about 0.9 times of KB04.	Used for mud pump.
	KB07	KmTBMnMo	$\geq 400$	3-6	38-42	Lighter erode resistance and lower hardness. It can be perforated and tapped.	Used for light wear condition with fine grain.
Anti-wear & anti-corrosive iron	KB09		$\geq 600$		43	It has certain erode resistance and corrosive resistance in low pH condition. Its wear resistance is nearly equal to KB02.	Used for lower pH condition especially for flue gas. It also can be used for low-sour condition and desulfuration installation with pH not be less than 4
	KB33				45	It has certain erode resistance that is similar to KB02 and certain corrosive resistance.	It can transport oxygenated slurry with pH not be less than 1 such as phosphor-plaster, nitric acid, vitriol, phosphate etc.
Anti-wear cast steel	KM03		$\geq 1200$		HB 350-500	Higher hardness and anti-erode.	Used for anti-wear & anti-corrosive and high erode condition such as parts of dredge pump, clear pump, sewage pump and slurry pump.
	KM05		$\geq 1000$		HB $\geq 350$	Lower hardness, better anti-wear & anti-corrosive and weldable.	Used for light erode and wear condition such as transport water media contain fine grain.

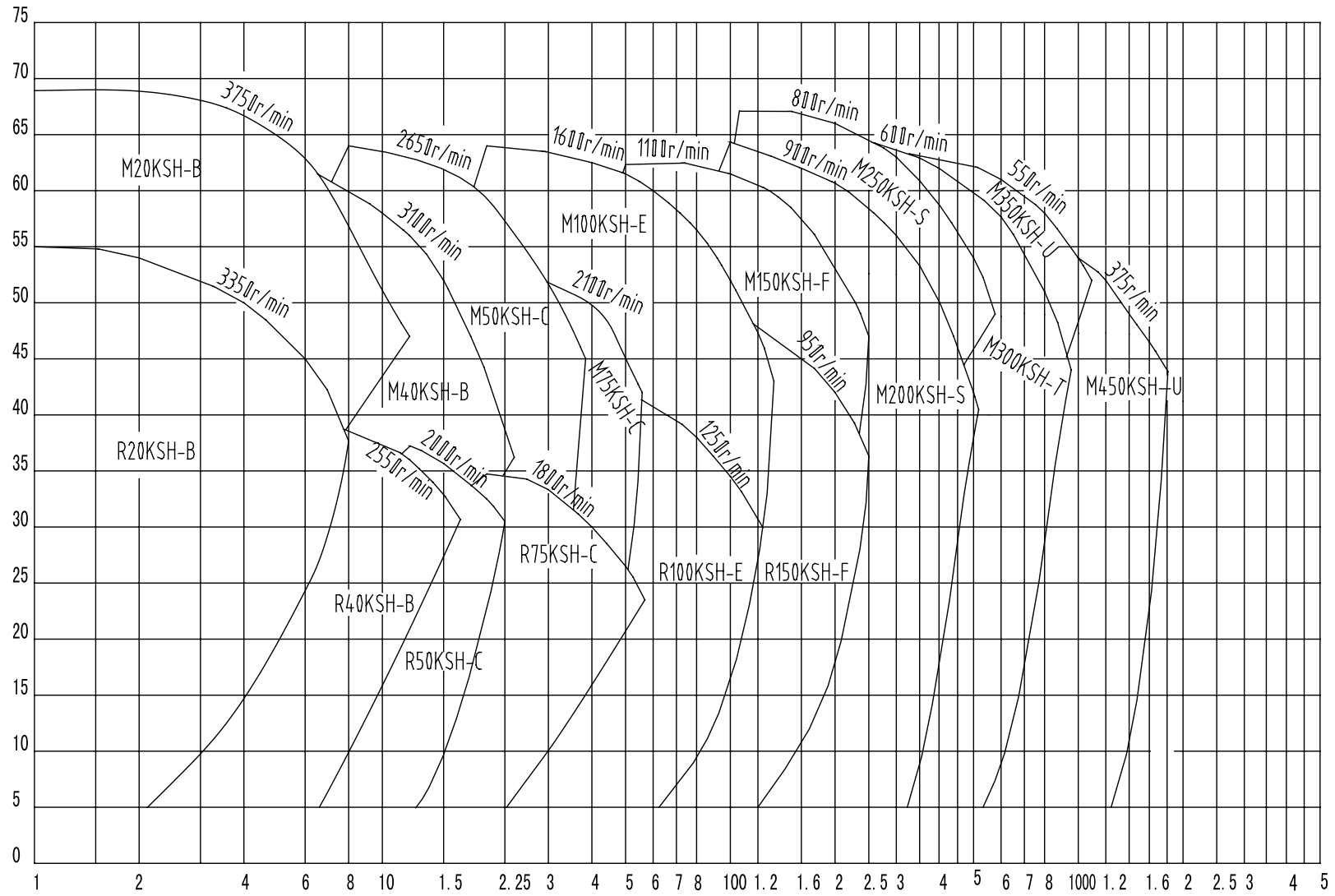
## New Material Research



The centrifugal slurry pump is used to transport solid and liquid that can be widely applied to the departments of metallurgy, mine, coal, electric power, chemical & industry, food, sewage treatment and channel dredging, etc. So the service life is key to the pump besides satisfying the demands of conditions completely. After adopting anti-wear design and reasonable materials, the service life of pump has been improved effectually. Suitable series K anti-wear & anti-corrosive material or metal & non-metal anti-wear material have been used to make flow parts according to all kinds of specified conditions and wear discipline, so that the pump can operate under the best state and get best operation benefit.

H(m)

Type KSH selection chart ( discharge diameter ≤ 450mm )



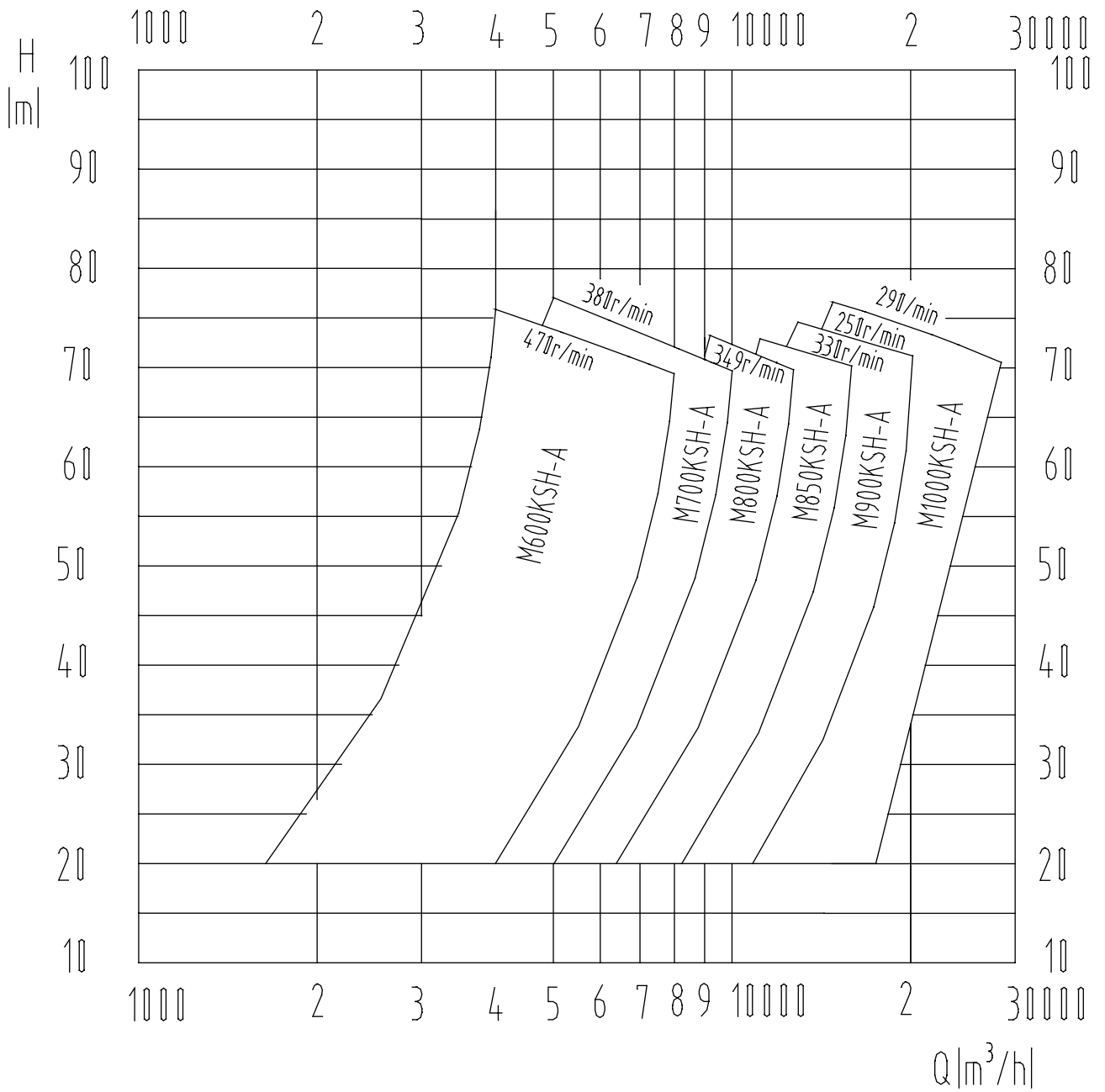
Q(l/s)

NOTE: Approximate performance for clear water, to be used for primary selection only

**Type KSH selection performance ( discharge diameter ≤450mm )**

TYPE	(KW) Max Allowable Power	Material		Performance under clear water						Impeller		Curve No
		Liner	Impeller	Q Flow capacity		H(m) Head	n(r/min) Speed	(%) Max Efficiency	NPSH (m) Max	片 Vane No	直径 (mm) Impeller Dia	
				(M <sup>3</sup> /h)	(L/s)							
M20KSH-B	15	M	M	12.6~30.6	3.5~8.5	10~66	1200~3750	43	2~4	5	155	M20KSH-B-01
R20KSH-B		R	R	10.8~27	3~7.5	6~50	1350~3350	38				R20KSH-B-01
M40KSH-B	15	M	M	27~72	7.5~20	6~55	1100~3100	48	3.5~8	4	185	M40KSH-B-01
R40KSH-B		R	R	27~54	7.5~15	6~38	1050~2550	53	2.5~5		180	R40KSH-B-01
M50KSH-C	30	M	M	36~90	10~25	12~62	1300~2650	58	4~6	5	220	M50KSH-C-01
R50KSH-C		R	R	36~72	10~20	12~36	1250~2000	63	2~4		210	R50KSH-C-01
M75KSH-C	30	M	M	90~198	25~55	8~50	1000~2100	74	4~6	4	245	M75KSH-C-01
R75KSH-C		R	R	72~180	20~50	8~33.5	800~1800	62	3~5			R75KSH-C-01
M100KSH-E	60	M	M	162~360	45~100	12~62	800~1600	68	5~8	5	365	M100KSH-E-01
R100KSH-E		R	R	162~324	45~90	12~37	800~1250	68	3~5			R100KSH-F-01
M150KSH-F	300	M	M	360~828	100~230	10~60	500~1100	75	2~9	4	515	M150KSH-F-01
R150KSH-F		R	R	360~720	100~200	7~45	400~950	68	5~10	5	515	R150KSH-F-01
M200KSH-S	560	M	M	630~1368	175~380	12~65	400~900	74	4~10	4	685	M200KSH-S-01
R200KSH-S		R	R	540~1188	150~330	12~45	400~700	78	4~12			R200KSH-S-01
M250KSH-S	560	M	M	900~1980	250~550	7~65	300~800	85	2.5~7.0	5	765	M250KSH-S-01
R250KSH-S		R	R	900~1620	250~450	7~45	300~650	83	2.5~7.5			R250KSH-S-01
M300KSH-T	1200	M	M	1260~2700	350~750	13~60	300~600	80	3~10	5	970	M300KSH-T-01
R300KSH-T		R	R	1260~2520	350~700	13~45	300~500	82	2.5~8.0			R300KSH-T-01
M350KSH-U	1200	M	M	1440~3060	400~850	11~60	250~550	82	4.0~9.0	5	1085	M350KSH-U-01
M450KSH-U	1200	M	M	2700~5400	750~1500	13~55	200~375	88	4.5~9.5	5	1375	M450KSH-U-01

**Type KSH selection chart ( discharge diameter  $\geq 600\text{mm}$  )**

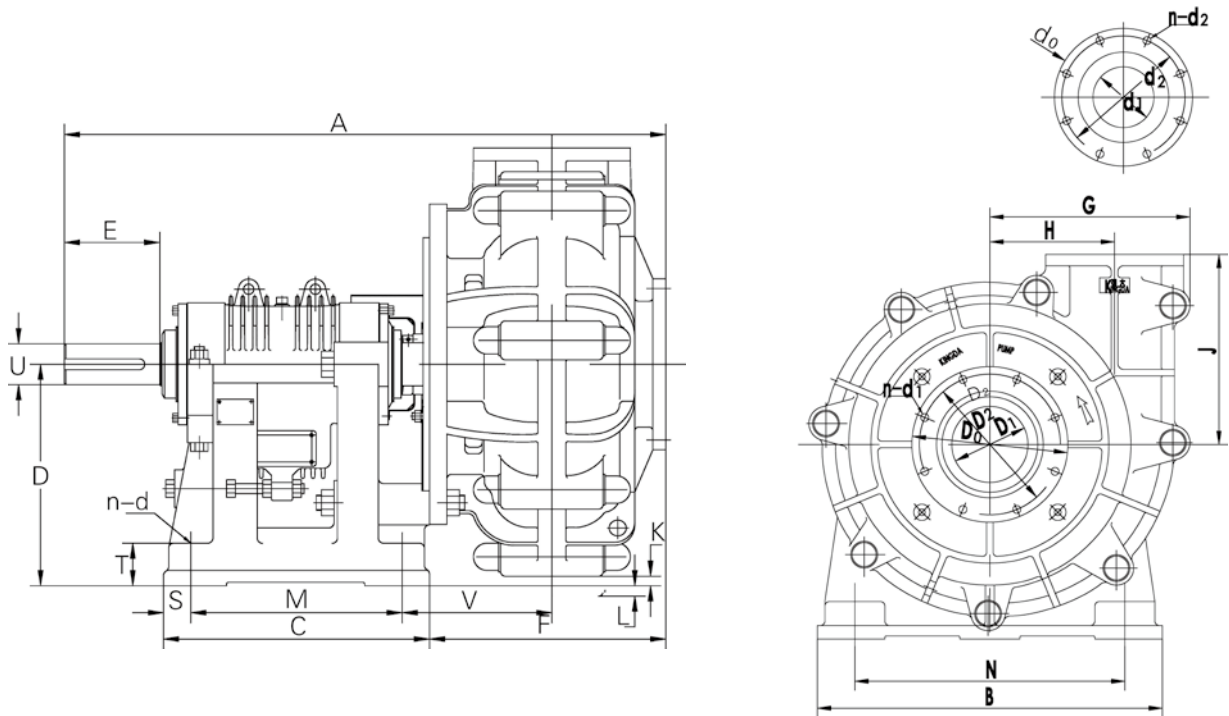




**Type KSH selection performance ( discharge diameter  $\geq 600\text{mm}$  )**

Type	Capacity ( $\text{m}^3/\text{h}$ )	Head (m)	Speed (r/min)	Efficiency (%)	NPSHr (m)	Max.Diameter of Flow Partice (mm)	Weight (kg)
M600KSH-A	6500~7500	30 ~ 65	350 ~ 480	80	<6	220	30000
M700KSH-A	8000~10000	30 ~ 70	250 ~ 400	85	<6	280	45000
M800KSH-A	10000~13000	30 ~ 65	250 ~ 360	81	<6	300	40000
M850KSH-A	13000~15000	30 ~ 75	250 ~ 340	85	<6	320	65000
M900KSH-A	13000~18000	22 ~ 78	175 ~ 290	85	<6	340	80000
M1000KSH-A	18000~25000	23 ~ 76	180 ~ 290	85~87	<6	350	121000



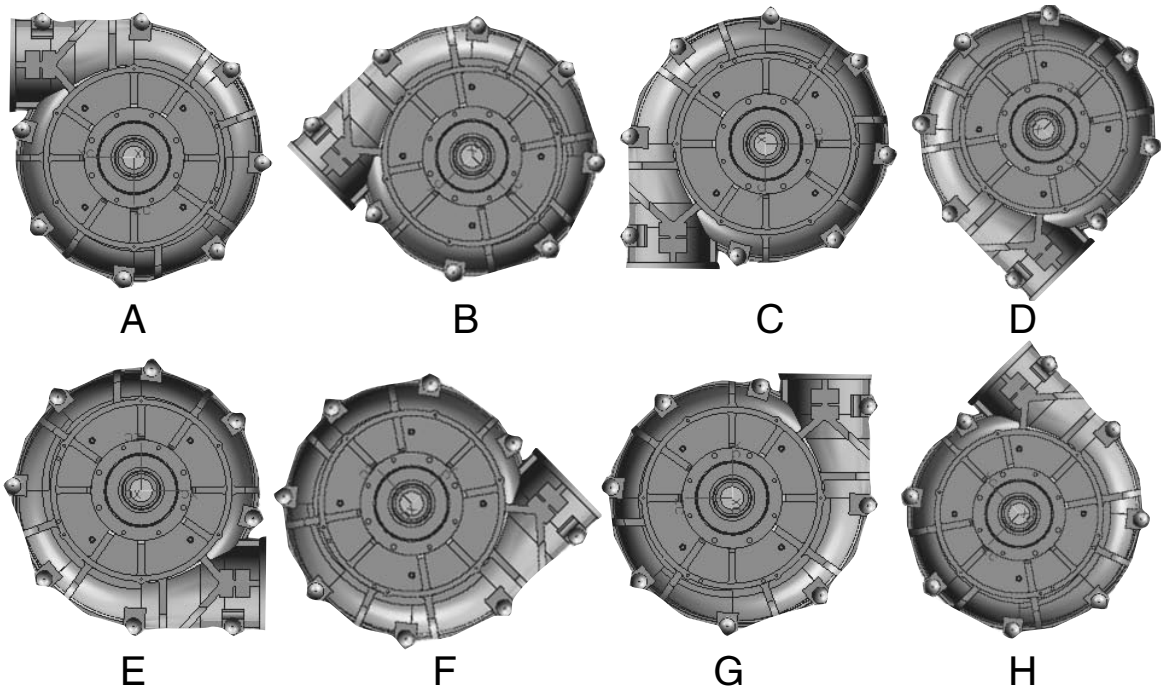


### Outline and Installation Dimension

Type	A	B	C	D	U	E	F	G	H	J	K	L	M	N	V	T	S	n-d
20KSH-B	585	295	248	197	28	79	206	187	98	171	46	-	140	255	191	38	24	4-Φ14
40KSH-B	595	295	248	197	28	79	217	205	114	184	30	-	140	255	194	38	24	4-Φ14
50KSH-C	770	406	311	255	42	125	280	238	138	210	58	-	170	355	234	48	35.5	4-Φ19
75KSH-C	845	406	311	255	42	125	354	292	149	262	15	-	170	355	271	48	35.5	4-Φ19
100KSH-E	1180	622	448	457	80	222	433	406	229	338	117	-	260	545	351	76	54	4-Φ29
150KSH-F	1510	857	635	610	100	280	539	551	318	460	93	-	350	760	438	98	95	4-Φ35
200KSH-S	1745	1150	780	650	120	280	692	677	419	635	28	-	620	900	439	125	80	4-Φ48
250KSH-S	1840	1150	780	650	120	280	762	755	464	673	-	85	620	900	461	125	80	4-Φ48
300KSH-T	2270	1150	1040	650	150	352	813	944	629	832	-	191	880	900	486	120	80	4-Φ48
350KSH-U	2320	1460	1050	900	150	351	953	1075	940	889	-	115	860	1200	597	150	95	4-Φ79
450KSH-U	2535	1444	1050	900	150	351	1100	1444	940	1230	-	47	860	1200	615	150	95	4-Φ79

NOTE: when the discharge diameter is  $\geq 600\text{mm}$ , the outline installation dimension should be as per the requirements of the clients.

Discharge angle



Type	Suction Flange				Discharge Flange				Pump Weight(kg)	
	D <sub>0</sub>	D <sub>1</sub>	D <sub>2</sub>	n-d <sub>1</sub>	d <sub>0</sub>	d <sub>1</sub>	d <sub>2</sub>	n-d <sub>2</sub>	Metal	Rubber
20KSH-B	152	38	115	4-Φ16	166	25	130	4-Φ16	110	95
40KSH-B	184	51	145	4-Φ19	165	38	130	4-Φ19	133	125
50KSH-C	216	76	180	4-Φ19	184	51	145	4-Φ19	202	161
75KSH-C	279	102	235	4-Φ22	229	76	190	4-Φ22	279	243
100KSH-E	337	152	295	12-Φ22	279	102	240	8-Φ22	783	659
150KSH-F	406	203	355	12-Φ26	368	152	325	8-Φ22	1607	1102
200KSH-S	502	254	445	12-Φ26	432	203	375	8-Φ26	3970	3320
250KSH-S	527	317	470	12-Φ26	527	254	470	12-Φ26	4581	3615
300KSH-T	615	395	565	12-Φ26	552	305	495	12-Φ26	7101	5053
350KSH-U	705	406	640	8-Φ35	673	356	610	12-Φ29	11025	9050
450KSH-U	900	508	800	12-Φ42	900	460	800	12-Φ42	19677	16500