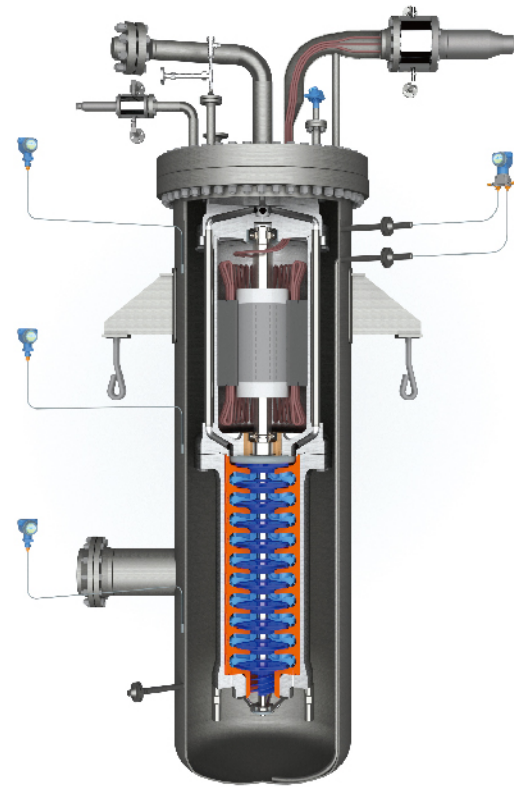
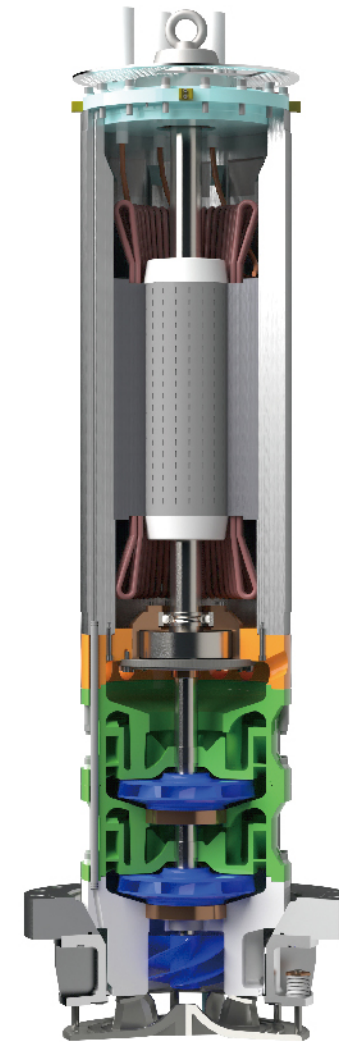


# 1 低温潜液泵 Cryogenic Submersible Centrifugal Pump



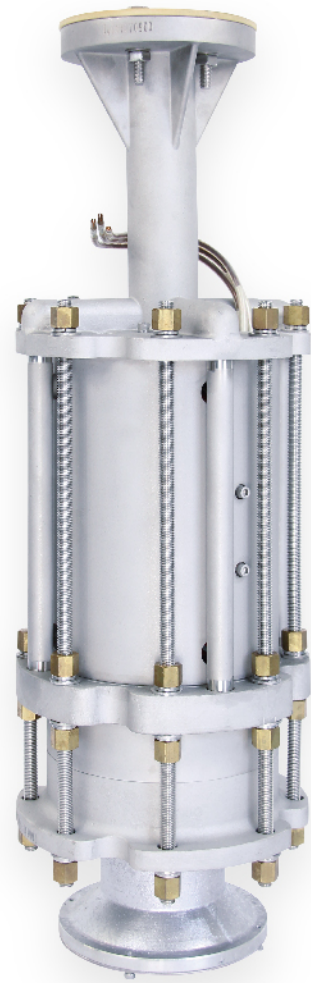
1.1 高压外输泵 High Pressure Transfer Pump				
	流量 m³/h	扬程 m	净正吸入压头 m	电机功率 kw
IBZ-77/1300	77	1300	1.0	250
IBZ-160/790	160	790	1.2	315
IBZ-100/1255	100	1255	1.2	315
IBZ-120/1100	120	1100	1.2	355
IBZ-200/1255	200	1255	1.5	560
IBZ-431/900	431	900	0.75	750
IBZ-308/1923	308	1923	0.75	1120
IBZ-407/2629	407	2629	1.1	2200
IBZ-530/2470	530	2470	1.1	2200
适用介质	液化天然气、液氮、液氩、乙烯、LPG、乙烷等。			
应用说明	主要用于大型储备库、船舶、码头、液化工厂等。			
	Flow m³/h	Head m	NPSH <sub>3</sub> m	Power kw
IBZ-77/1300	77	1300	1.0	250
IBZ-160/790	160	790	1.2	315
IBZ-100/1255	100	1255	1.2	315
IBZ-120/1100	120	1100	1.2	355
IBZ-200/1255	200	1255	1.5	560
IBZ-431/900	431	900	0.75	750
IBZ-308/1923	308	1923	0.75	1120
IBZ-407/2629	407	2629	1.1	2200
IBZ-530/2470	530	2470	1.1	2200
Liquids Pumped	LNG, LN <sub>2</sub> , LAr, LPG, Ethylene, Ethane etc.			
Application Notes	Mainly used for large storage, large ship and port.			



1.2 罐内输送泵 In-tank Transfer Pump				
	流量 m³/h	扬程 m	净正吸入压头 m	电机功率 kw
IBZ-120/120	120	120	0.75	55
IBZ-51/279	51	279	0.75	55
IBZ-132/230	132	230	0.5	90
IBZ-355/120	355	120	0.5	90
IBZ-240/190	240	190	0.6	110
IBZ-260/140	260	140	0.6	110
IBZ-460/289	460	289	0.8	315
IBZ-560/275	560	275	0.5	315
IBZ-1680/150	1680	150	1.4	500
IBZ-2000/150	2000	150	1.0	630
IBZ-2500/150	2500	150	1.0	800
IBZ 342/977	342	977	1.2	1000
适用介质	液化天然气、液氮、液氩、乙烯、LPG、乙烷、液氨等。			
应用说明	主要用于大型储备库、船舶、码头、液化工厂等。			
	Flow m³/h	Head m	NPSH <sub>3</sub> m	Power kw
IBZ-120/120	120	120	0.75	55
IBZ-51/279	51	279	0.75	55
IBZ-132/230	132	230	0.5	90
IBZ-355/120	355	120	0.5	90
IBZ-240/190	240	190	0.6	110
IBZ-260/140	260	140	0.6	110
IBZ-460/289	460	289	0.8	315
IBZ-560/275	560	275	0.5	315
IBZ-1680/150	1680	150	1.4	500
IBZ-2000/150	2000	150	1.0	630
IBZ-2500/150	2500	150	1.0	800
IBZ 342/977	342	977	1.2	1000
Liquids Pumped	LNG, LN <sub>2</sub> , LAr, LPG, Ethylene, Ethane, Liquid ammonia etc.			
Application Notes	Mainly used for large storage, large ship and port.			

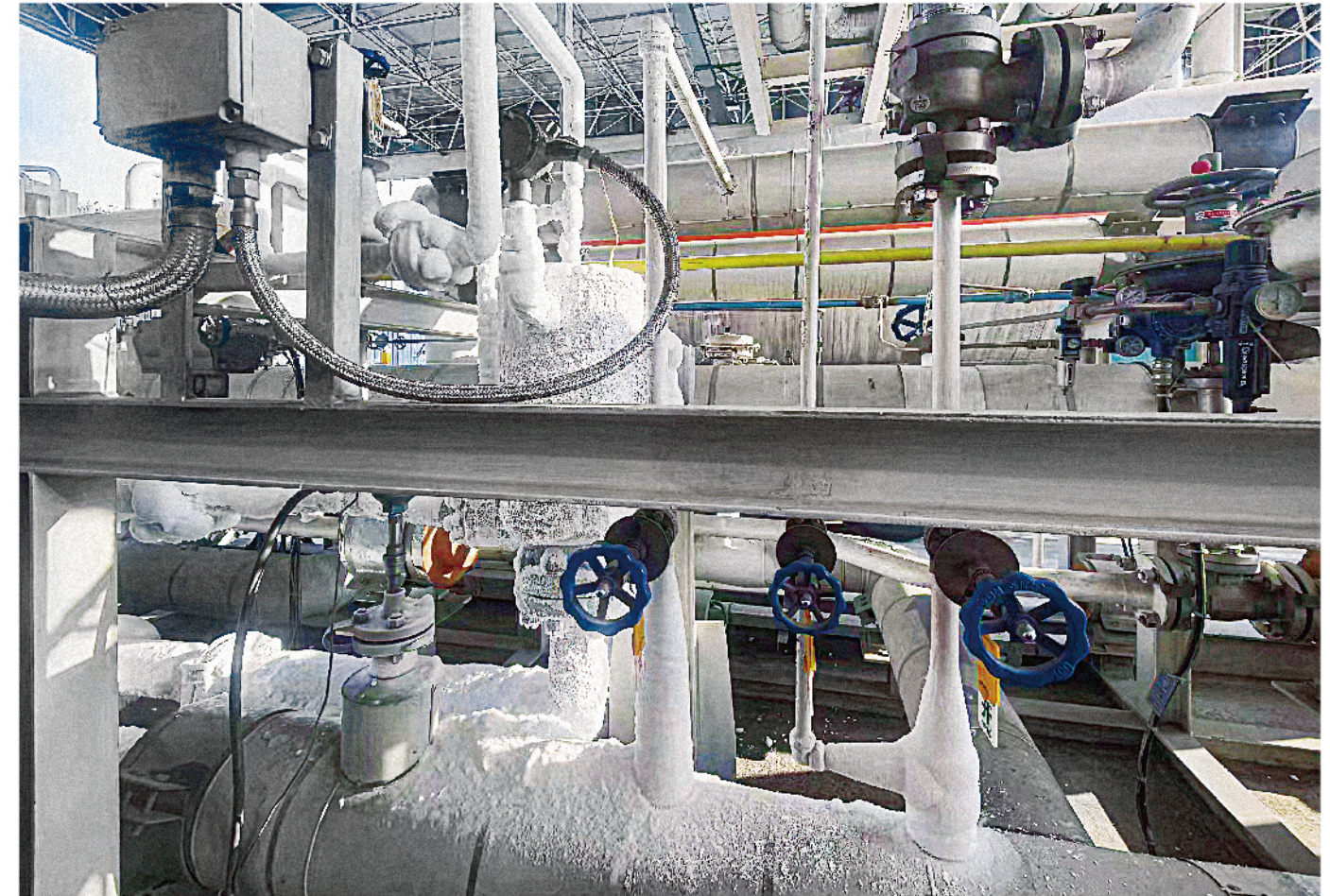


# 1 低温潜液泵 Cryogenic Submersible Centrifugal Pump



1.3 小型低温潜液离心泵 Small Cryogenic Submersible Centrifugal Pump

	流量 m <sup>3</sup> /h	扬程 m	净正吸入压头 m	电机功率 kw
IBZ-12/220	12	220	0.75	11
IBZ-15/250	15	250	0.75	15
IBZ-12/440	12	440	0.75	22
IBZ-30/300	30	300	0.75	15
适用介质	液化天然气、液氮、液氢、乙烯、LPG、乙烷等。			
	Flow m <sup>3</sup> /h	Head m	NPSH <sub>3</sub> m	Power kw
IBZ-12/220	12	220	0.75	11
IBZ-15/250	15	250	0.75	15
IBZ-12/440	12	440	0.75	22
IBZ-30/300	30	300	0.75	15
Liquids Pumped	LNG, LN <sub>2</sub> , LAr, LPG, Ethylene, Ethane etc.			

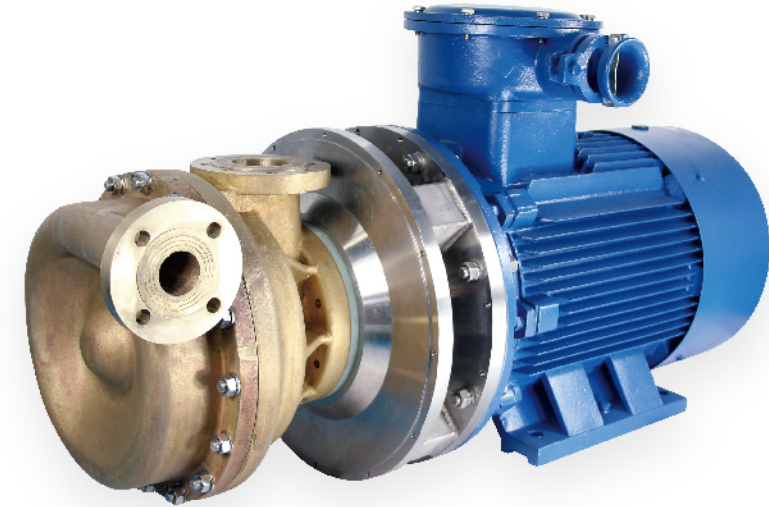
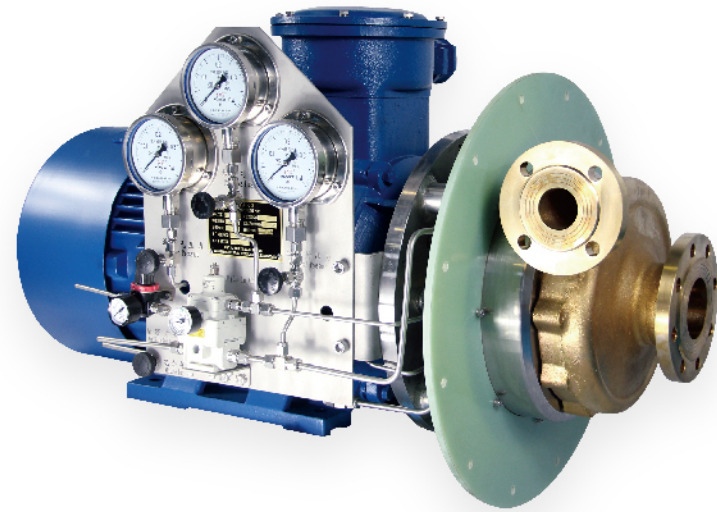


1.4 卸车泵 Unloading Pump For Tanker Truck

	流量 m <sup>3</sup> /h	扬程 m	净正吸入压头 m	电机功率 kw		Flow m <sup>3</sup> /h	Head m	NPSH <sub>3</sub> m	Power kw
IBZ-30/80	30	80	0.91	5.5	IBZ-30/80	30	80	0.91	5.5
IBZ-40/75	40	75	0.91	7.5	IBZ-40/75	40	75	0.91	7.5
IBZ-40/90	40+	90	0.91	11	IBZ-40/90	40+	90	0.91	11
适用介质	液化天然气、液氮、液氢、乙烯、LPG、乙烷等。				Liquids Pumped	LNG, LN <sub>2</sub> , LAr, LPG, Ethylene, Ethane etc.			



# 2 卧式离心泵 Horizontal Centrifugal Pump



## 2.1 长周期低温离心泵 Long-cycle Cryogenic Centrifugal Pumps

	流量 m <sup>3</sup> /h	扬程 m	净正吸入压头 m	电机功率 kw		Flow m <sup>3</sup> /h	Head m	NPSH <sub>3</sub> m	Power kw
LBP-12/55	12	55	1.6	7.5	LBP-12/55	12	55	1.6	7.5
LBP-16/75	16	75	2	11	LBP-16/75	16	75	2	11
LBP-24/80	24	80	2	22	LBP-24/80	24	80	2	22
LBP-32/73	32	75	2.5	30	LBP-32/73	32	75	2.5	30
LBP-51/70	50	75	2.5	37	LBP-51/70	50	75	2.5	37
LBP-85/75	85	75	1.2	55	LBP-85/75	85	75	1.2	55
LBP-25/260	25	260	2.2	75	LBP-25/260	25	260	2.2	75
LBP-55/260	55	260	2	110	LBP-55/260	55	260	2	110
LBP-80/280	80	280	2.3	132	LBP-80/280	80	280	2.3	132
LBZ-100/450	100	450	1.1	280	LBZ-100/450	100	450	1.1	280
LBZ-69/880	69	880	1.1	280	LBZ-69/880	69	880	1.1	280

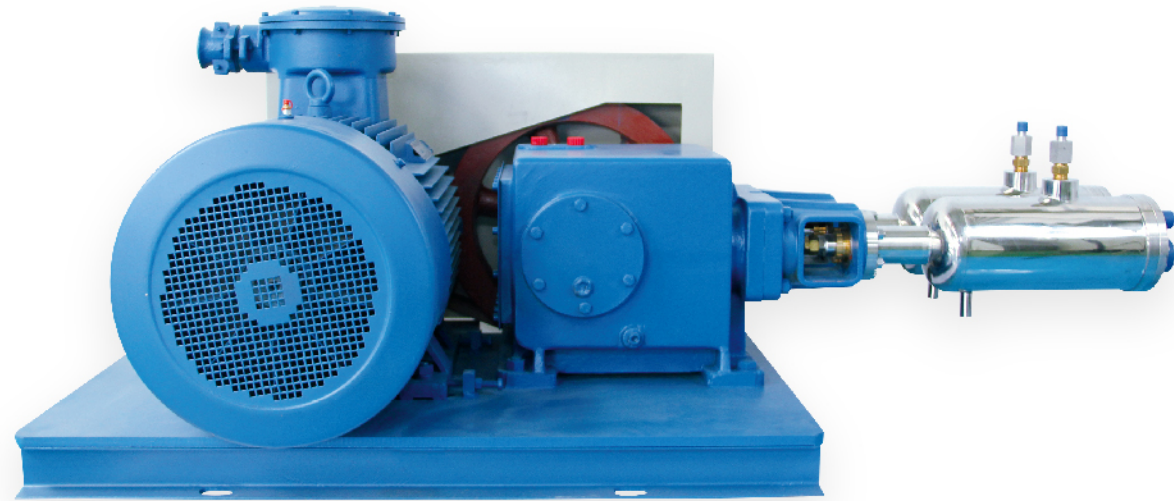
密封形式	气体迷宫密封	Sealing form	Gas labyrinth seal
连续无故障运行时间	≥20000 hr	Maintenance intervals	≥20000 hr
适用介质	液化天然气、液氮、液氩、液氧	Liquids Pumped	LNG; LN <sub>2</sub> ; LAr; LO <sub>2</sub>
应用说明	1. 易燃易爆介质配备防爆电机; 2. 流量最大可达1250m <sup>3</sup> /h。	Application Notes	1. Explosion proof motor for flammable and explosive medium; 2. The max flow to 1250m <sup>3</sup> /h.

## 2.2 间歇式运行低温离心泵 Discontinuous Operation Centrifugal Pump

	流量 m <sup>3</sup> /h	扬程 m	净正吸入压头 m	电机功率 kw		Flow m <sup>3</sup> /h	Head m	NPSH <sub>3</sub> m	Power kw
BP-15/130	15	130	3	22	BP-15/130	15	130	3	22
BP-24/60	24	60	2	11	BP-24/60	24	60	2	11
BP-24/80	24	80	2.5	18.5	BP-24/80	24	80	2.5	18.5
BP-45/75	45	75	2.5	22	BP-45/75	45	75	2.5	22
BP-90/140	90	140	2.5	75	BP-90/140	90	140	2.5	75
BP-25/260	25	260	3	75	BP-25/260	25	260	3	75
BP-55/260	55	260	3	90	BP-55/260	55	260	3	90
BP-80/280	80	280	3	132	BP-80/280	80	280	3	132
BP-240/180	240	180	2	250	BP-240/180	240	180	2	250
BP-300/150	300	150	2	200	BP-300/150	300	150	2	200
BP-600/180	600	180	1.5	500	BP-600/180	600	180	1.5	500

密封形式	机械式密封	Sealing form	Mechanical seal
连续无故障运行时间	≥2000 hr	Maintenance intervals	≥2000 hr
适用介质	液化天然气、液氮、液氩、液氧	Liquids Pumped	LNG; LN <sub>2</sub> ; LAr; LO <sub>2</sub>
应用说明	1. 易燃易爆介质配备防爆电机; 2. 流量最大可达1250m <sup>3</sup> /h。	Application Notes	1. Explosion proof motor for flammable and explosive medium; 2. The max flow to 1250m <sup>3</sup> /h.

# 3 往复泵 Reciprocating Pump



3.1 高压活塞泵 High Pressure Reciprocating Pump

流量 L/h	出口压力 MPa	净正吸入压头 m	电机功率 kw	Rate of flow L/h	Discharge pressure MPa	NPSHs m	Power kw
BP400/450	25	1.2	7.5-18	BP400/450	25	1.2	7.5-18
BP800/450	25	1.2	11-37	BP800/450	25	1.2	11-37
DBP1500/250	25	1.5	22	DBP1500/250	25	1.5	22
DBP2500/250	25	1.5	37	DBP2500/250	25	1.5	37
DBP3500/250	25	1.5	45	DBP3500/250	25	1.5	45
TBP8000/350	35	1.5	110	TBP8000/350	35	1.5	110
DBP-3000/800	80	1.5	90	DBP-3000/800	80	1.5	90

无故障运行时间	≥2000 hr	Maintenance intervals	≥2000 hr
适用介质	液化天然气、液氮、液氢、液氧	Liquids Pumped	LNG; LN <sub>2</sub> ; LAr; LO <sub>2</sub>
应用说明	1. 易燃易爆介质配备防爆电机; 2. 部分介质最大流量可达12000L/h, 最高出口压力可达80MPa。	Application Notes	1. Explosion proof motor for flammable and explosive medium; 2. The max flow to 12000L/h, the max haad of delivery to 80MPa; 3. We can design and manufacture for special requirements.

3.2 大流量中压低温活塞泵 High Flow-medium Pressure Reciprocating Pump

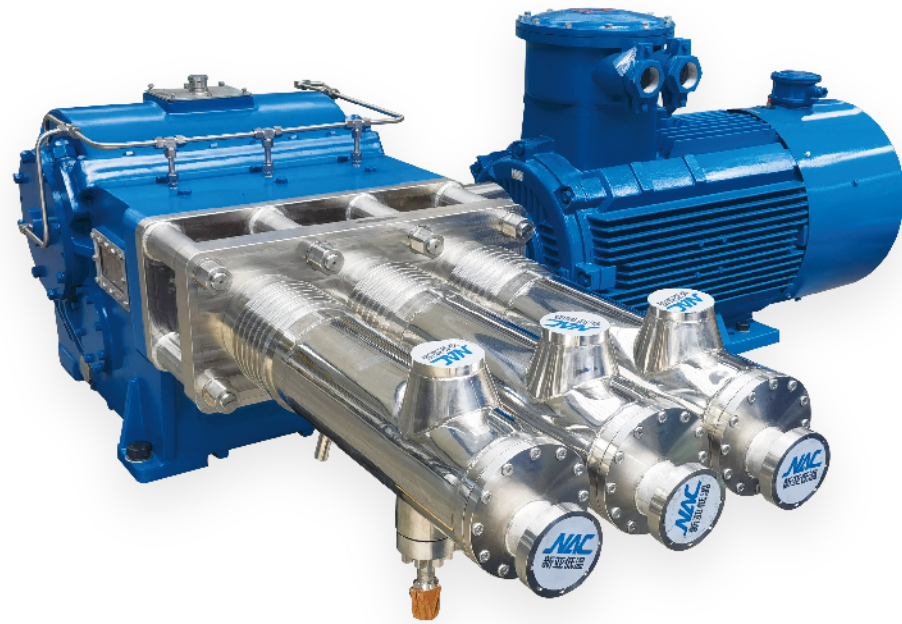
流量 L/h	出口压力 MPa	电机功率 kw	Rate of flow L/h	Discharge pressure MPa	Power kw
DBP-3000/30	3	7.5	DBP-3000/30	3	7.5
DBP-6000/30	3	15	DBP-6000/30	3	15
TBP-8000/30	3	18.5	TBP-8000/30	3	18.5
TBP-15000/30	3	22	TBP-15000/30	3	22
TBP-25000/30	3	45	TBP-25000/30	3	45
TBP-35000/30	3	55	TBP-35000/30	3	55
DBP-45000/30	3	75	DBP-45000/30	3	75

无故障运行时间	≥2000 hr	Maintenance intervals	≥2000 hr
适用介质	液氮、液氢、液氧	Liquids Pumped	LN <sub>2</sub> ; LAr; LO <sub>2</sub>
应用说明	1. 易燃易爆介质配备防爆电机; 2. 部分介质最大流量可达45000L/h; 3. 以上为我公司常规产品, 如有特殊需求可单独设计、制造。	Application Notes	1. Explosion proof motor for flammable and explosive medium; 2. The max flow to 45000L/h; 3. We can design and manufacture for special requirements.



# 3 往复泵 Reciprocating Pump



### 3.3 连续运行低温往复泵 Continuous Operation Of Cryogenic Reciprocating Pumps

	流量 L/h	出口压力 MPa	电机功率 kw		Rate of flow L/h	Discharge pressure MPa	Power kw
LBP20-80/165	20-80	16.5	1.5	LBP20-80/165	20-80	16.5	1.5
LBP100-300/165	100-300	16.5	5.5	LBP100-300/165	100-300	16.5	5.5
LBP500-1000/165	500-1000	16.5	18.5	LBP500-1000/165	500-1000	16.5	18.5
LBP20-80/165	1000-3000	3	7.5	LBP20-80/165	1000-3000	3	7.5
LBP20-80/165	3000-10000	8	55	LBP20-80/165	3000-10000	8	55
LBP20-80/165	10000-40000	10	185	LBP20-80/165	10000-40000	10	185
无故障运行时间	20000 hr			Maintenance intervals	20000 hr		
适用介质	液化天然气、液氮、液氢、液氧			Liquids Pumped	LNG; LN <sub>2</sub> ; LAr; LO <sub>2</sub>		
应用说明	1. 易燃易爆介质配备防爆电机; 2. 部分介质最大流量可达40000L/h; 3. 以上为我公司常规产品, 如有特殊需求可单独设计、制造。			Application Notes	1. Explosion proof motor for flammable and explosive medium; 2. The max flow to 40000L/h; 3. We can design and manufacture for special requirements.		

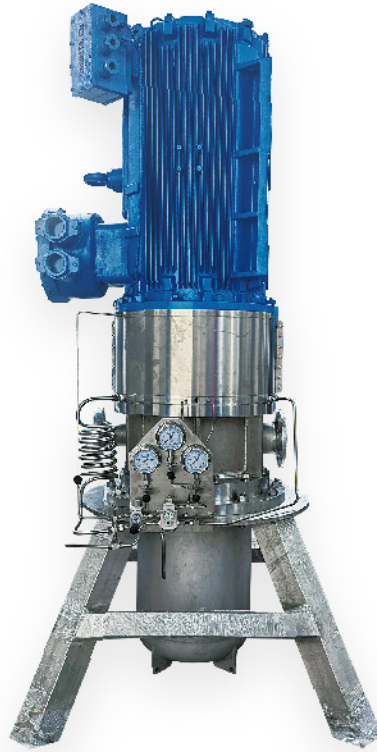


### 3.4 往复式液氢泵 Reciprocating Liquid Hydrogen Pump

	流量 L/h	出口压力 MPa	电机功率 kw		Rate of flow L/h	Discharge pressure MPa	Power kw
BP-7500/16	7500	1.6	7.5	BP-7500/16	7500	1.6	7.5
BP-1500/900	1500	90	75	BP-1500/900	1500	90	75
无故障运行时间	20000 hr			Maintenance intervals	20000 hr		
适用介质	液氢			Liquids Pumped	LH <sub>2</sub>		



## 4 半潜式多级离心泵 Semi-submersible Multistage Centrifugal Pump



半潜式多级离心泵 Semi-submersible Multistage Centrifugal Pump

	流量 m <sup>3</sup> /h	扬程 m	电机功率 kw		Flow m <sup>3</sup> /h	Head m	Power kw
BZ-11/260	100	1255	30	BZ-11/260	100	1255	30
BZ-16/326	16	326	37	BZ-16/326	16	326	37
BZ-46/260	46	260	110	BZ-46/260	46	260	110
BZ-55/515	55	515	200	BZ-55/515	55	515	200
BZ-69/880	69	880	280	BZ-69/880	69	880	280
BZ-69/770	69	770	280	BZ-69/770	69	770	280
BZ-100/450	100	450	280	BZ-100/450	100	450	280
BZ-350/565	350	565	900	BZ-350/565	350	565	900
适用介质	液氧、液氮、液氩、液空			Liquids Pumped	LO <sub>2</sub> ; LN <sub>2</sub> ; LAr; Liquid Air		
应用说明	主要用于大型空分、储能、化工。			Application Notes	It is mainly used for large-scale air separation, energy storage, chemical and other projects		

## 5 膨胀机 Expander



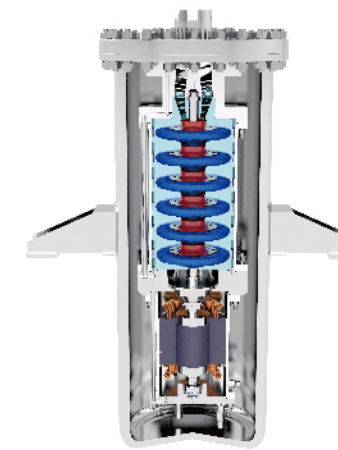
5.1 氦膨胀机 | Helium Expander

设计温度	-269°C/4K	Design Temperature	-269°C/4K
最低工作温度	-261°C/12K	Minimum Operating Temperature	-261°C/12K
转速	150000rpm	Speed	150000rpm
工作介质	氦气	Working medium	Helium
轴承	气体轴承	Bearing	Gas Bearing

5.2 制氢用膨胀机 | Expander For Hydrogen Production

处理量	0.3tpd/0.5tpd/2.5tpd /5.0tpd/10.0tpd等	Production Volume	0.3tpd/0.5tpd/2.5tpd /5.0tpd/10.0tpd, etc.
工作介质	氢气(5.0tpd以下)和氦气(5.0tpd以上)	Working Medium	Helium(below 5.0tpd) and Hydrogen(above 5.0tpd)

## 6 液力透平系统 Fluid Turbine System



- 低温高压流体经过传统 J-T 节流降压的过程接近于等焓过程，流体压力能主要转变为内能；

The process of depressurizing low-temperature high-pressure fluid through a traditional J-T throttle valve is close to an isenthalpic process, in which fluid pressure energy is mainly converted into internal energy;
- 根据气体组分与调压能力专门开发的液力透平轮，其等焓效率、高效区与抗闪蒸能力远远优于 J-T 节流降压和泵反转方案；

Hydraulic turbine wheels specially developed according to gas components and pressure regulating capacity, its isentropic efficiency, high efficiency range, and anti-flashing capability are far superior to the J-T throttle pressure reduction and pump reversal schemes;
- 经过低温液力透平降压的过程接近于等焓焓降的膨胀过程，流体的压力能主要用来对外膨胀做功；且经过接近于等焓焓降的膨胀过程后，相同压差下介质会获得更多冷量，得到过冷LNG，可以降低BOG产生量，提高LNG产能3%-5%。

The process of depressurizing through a low-temperature hydraulic turbine is close to an isentropic enthalpy drop expansion process, where the pressure energy of the fluid is mainly used to do work on the external expansion; and after undergoing an expansion process close to an isentropic enthalpy drop, the medium will gain more cooling under the same pressure difference, resulting in supercooled LNG, which can reduce the production of BOG and increase LNG production by 3%-5%.