

ROTOR

Under-water Vertical Chemical Pump



Model Sense

50F(H)Y(S) — 32 A

A:Cutting for impeller diameter no mark means common type

32: (mm) Head at designed point

FYS:PP Under-water Vertical chemical pump

FY: Under-water Vertical chemical pump

HY:Cast iron Under-water Vertical chemical pump

50: (mm)Inlet diameter

Brief introduction and features

FY series are vertical single-stage under-water centrifugal pumps,which are designed and manufactured by our company,on the basis of foreign developed technology.

FY serves are canceled mechanical seal,so they wont make for problems because of mechanical seal like other pumps,and resolved the troubles of maintain.They have many advantage,such as non-leakage,long using life,saving cost,improved the work efficiency and so on.

FY series adopt special centrifugal impeller,which are used to transport the clean medium without solid grain,so they are provided with lightly librate,low noise and high efficiency.

Applications

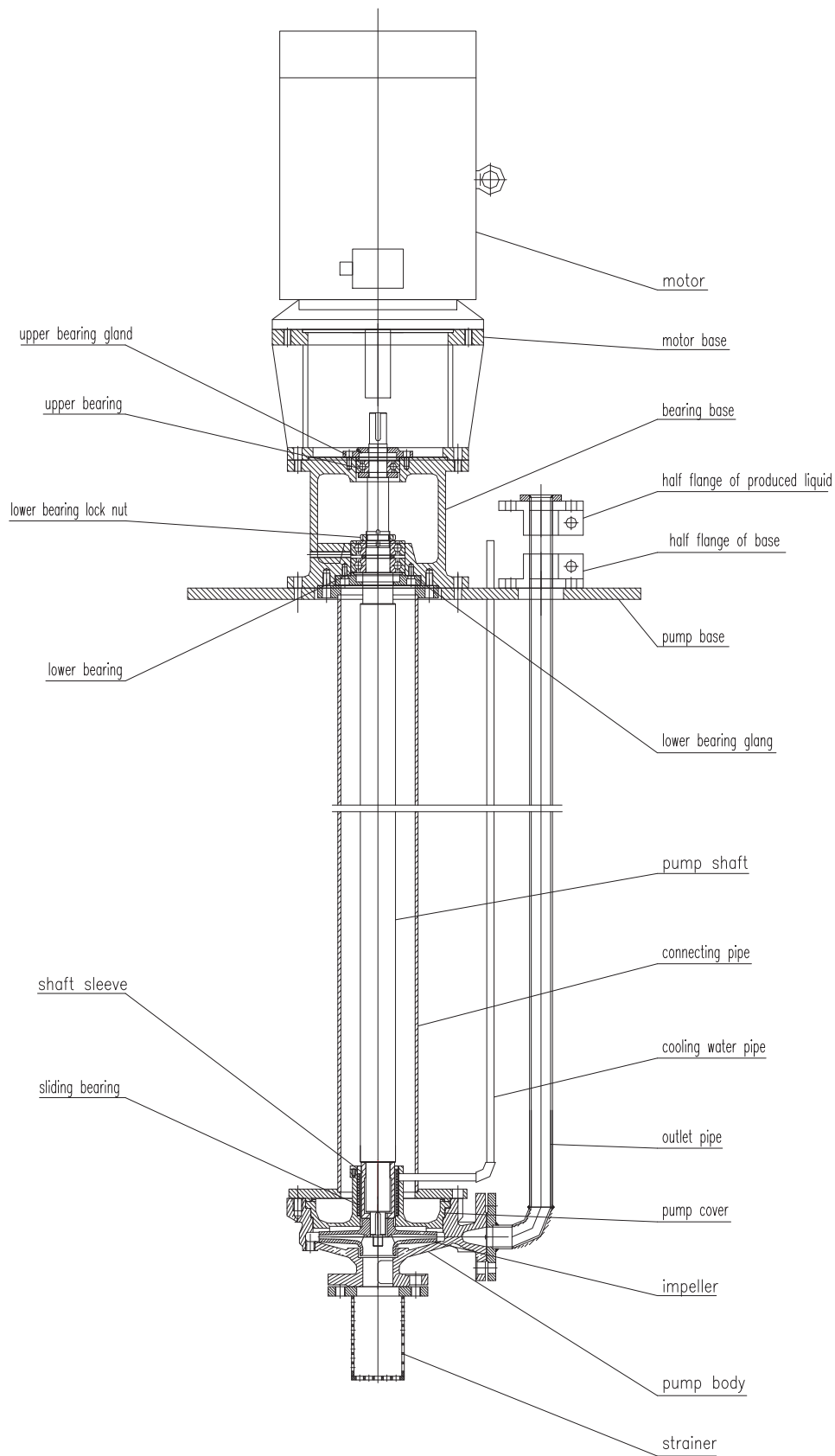
They can be widely used in oil,chemical industry,medicine,paper making,metallurgy and so on

Operating conditions

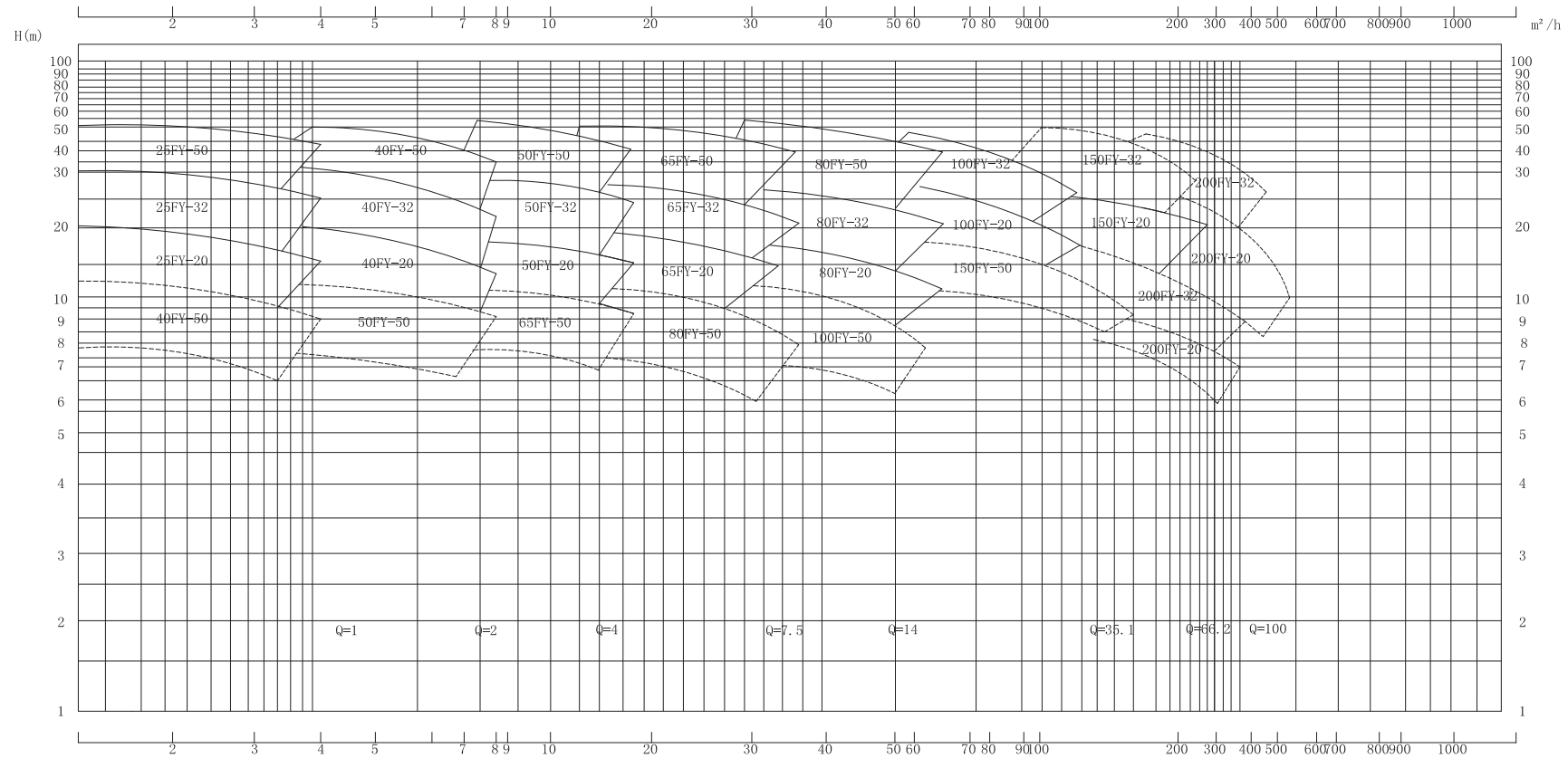
Medium temperature: -20~+140℃ Ambient temperature:≤+40℃ Capacity: 2~240m³/h

Head : 6~50m Caliber: 25~200mm System Max Operating Pressure: ≤1.6MPa

Type F (H)Y Structural drawing



Curve



Note: Real line refers to pump speed: 2960rpm, Broken line refers to pump speed: 1480rpm.

Performance Parameters

model	impeller type	n=2900r/min speed								n=1450r/min speed							
		Q m3/h capacity	H m head	Relative density<1.0		Relative density<1.35		Relative density<1.86		Q m3/ h capac- ity	H m head	Relative density<1.0		Relative density<1.35		Relative density<1.86	
				pow er	Motor model	pow er	Motor model	pow er	Motor model			pow er	Motor model	pow er	Motor model	power	Motor model
				KW		KW		KW				KW		KW		KW	
25DRFY-20		3.2	20	1.1	Y802-2	1.5	Y90S-2	2.2	Y90L-2	1.6	5	0.75	Y802-4	0.75	Y802-4	1.1	Y90S-4
	A	2.8	16							1.4	4						
25DRFY-32		2.8	32	3	Y100L-2	3	Y100L-2	4	Y112M-2	1.6	8	1.1	Y90S-4	1.1	Y90S-2	1.5	Y90L-4
	A	2.8	26							1.4	6.5						
25DRFY-50		3.2	50	5.5	Y132S1-2	7.5	Y132S2-2	11	Y160M1-2	1.6	12.5	1.1	Y90S-4	1.5	Y90L-4	2.2	Y110L-4
	A	2.8	41							1.4	10						
25DRFY-80		3.2	80	7.5	Y132S2-2	11	Y160M1-2	15	Y160M2-2	1.6	20	1.1	Y90S-4	1.5	Y90L-4	2.2	Y110L-4
	A	3	70	5.5	Y132S1-2	7.5	Y132S2-2	11	Y160M1-2	1.5	17						
	B	2.8	62	4	Y112M-2	5.5	Y132S1-2	11	Y160M1-2	1.4	15						
40DRFY-20		6.3	20	1.5	Y90S-2	2.2	Y90L-2	3	Y100L-2	3.2	5	0.75	Y802-4	0.75	Y802-4	1.1	Y90S-4
	A	5.5	16							2.8	4						
40DRFY-32		6.3	32	3	Y100L-2	3	Y100L-2	4	Y112M-2	3.2	8	1.1	Y90S-4	1.1	Y90S-2	1.5	Y90L-4
	A	5.5	26							2.8	6.5						

40DRFY-50		6. 3	50	5. 5	Y132S1-2	7. 5	Y132S- 2	11	Y160M1- 2	3. 2	12. 5	1. 1	Y90S-4	1. 5	Y90L-4	2. 2	Y100L1- 4					
	A	5. 5	41							2. 8	10											
40DRFY-80		6. 3	80	7. 5	Y132S2-2	11	Y160M1- -2	15	Y160M2- 2	3. 2	20	1. 5	Y90L-4	2. 2	Y100L1- -4	3	Y100L2- 4					
	A	5. 9	70	5. 5	Y132S1-2	7. 5	Y132S2- -2	11	Y160M1- 2	2. 9	17											
	B	5. 6	62							2. 8	15											
50DRFY-20		12. 5	20	1. 5	Y90S-2	2. 2	Y90L-2	3	Y100L-2	6. 3	5	0. 75	Y802-4	0. 75	Y802-4	1. 1	Y90S-4					
	A	11. 3	16. 4							5. 7	4. 1											
50DRFY-32		12. 5	32	3	Y100L-2	4	Y112M- 2	5. 5	Y132S1- 2	6. 3	8							Y802-4	0. 75	Y802-4	1. 1	Y90S-4
	A	11. 3	26. 4	2. 2	Y90L-2	3	Y100L- 2	4	Y112M-2	5. 7	6. 6											
50DRFY-50		12. 5	50	5. 5	Y132S1-2	7. 5	Y132S2- -2	11	Y160M1- 2	6. 3	12. 5	1. 1	Y90S-4	1. 1	Y90S-4	1. 5	Y90L-4					
	A	11. 3	41	4	Y112M-2	5. 5	Y132S1- -2	7. 5	Y132S2- 2	5. 7	10. 3			0. 75	Y802-4	1. 1	Y90S-4					
50DRFY-80		12. 5	80	11	Y160M1-2	15	Y160M2- -2	18. 5	Y160L-2	6. 3	20	1. 5	Y90L-4	2. 2	Y80L-4	3	Y100L2- 4					
	A	11. 7	70			11	Y160M1- -2	15	Y160M1- 2	5. 7	17. 5					2. 2	Y100L1- 4					
	B	11	62	7. 5	Y132S2-2																	
65DRFY-20		25	20	3	Y100L-2	4	Y112M- 2	5. 5	Y132S2- 2	12. 5	5	0. 75	Y802-4	0. 75	Y802-4	1. 1	Y90S-4					
	A	22. 7	16. 5	2. 2	Y90L-2	3	Y100L- 2	4	Y112M-2	11. 3	4. 1	0. 75				0. 75	Y802-4					
65DRFY-32		25	32	5. 5	Y132S1-2	5. 5	Y132S1- -2	7. 5	Y132S2- 2	12. 5	8	0. 75							1. 1	Y90S-4		

	A	22.7	26.5	4	Y112M-2	4	Y112M-2	5.5	Y132S1-2	11.3	6.6	0.75					
65DRFY-50		25	50	11	Y160M1-2	11	Y160M1-2	15	Y160M2-2	12.5	12.5	1.1	Y90S-4	1.5	Y90L-4	2.2	Y100L1-4
	A	22.7	41	7.5	Y132S2-2	7.5	Y132S2-2	11	Y160M1-2	11.3	10.3	1.1	Y90S-4	1.1	Y90S-4	1.5	Y90L1-4
65DRFY-80		25	80	15	Y160M2-2	18.5	Y160L-2	22	Y180M-2	12.5	20	2.2	Y100L1-4	3	Y100L2-4	4	Y112M-4
	A	23.4	74.8			15	Y160M2-2			11.5	17.5			2.2	Y100L1-4	3	Y100L2-4
	B	22	61.8	11	Y160M1-2		Y160M2-2			11.7	17.5			2.2	Y100L1-4	3	Y100L2-4

model	impeller type	n=2900r/min speed								n=1450r/min speed							
		capacity Q m3/h	head H m	Relative density<1.0		Relative density<1.35		Relative density<1.86		Capacity Q m3/h	H m head	Relative density<1.0		Relative density<1.35		Relative density<1.86	
				power	Motor model	power	Motor model	power	Motor model			power	Motor model	power	Motor model	power	Motor model
				KW		KW		KW				KW		KW		KW	
80DRFY-20		50	20	5.5	Y132S1-2	5.5	Y132S1-2	7.5	Y132S2-2	25	5	0.75	Y802-4	0.75	Y802-4	1.1	Y90S-4
	A	45.3	16.5							22.6	4.1					0.75	Y802-4
80DRFY-32		50	32	7.5	Y132S2-	11	Y160M1	15	Y160M2-	25	8	1.5	Y90S-4	1.5	Y90L-4	2.2	Y100L1-

					2		-2		2								4
	A	45.4	26.4			7.5	Y132S2-2	11	Y160M2-2	25	6.6	1.1	Y100L1-4	1.1	Y90S-4	1.5	Y90L-4
80DRFY-50		50	50	15	Y160M2-2	15	Y160M2-2	22	Y180M-2	22.7	12.5	2.2	Y100L1-4	2.2	Y100L1-4	3	Y100L2-4
	A	45.4	41	11	Y160M1-2			18.5	Y160L-2	1.4	10.3	1.5	Y90L-4			2.2	Y100L1-4
80DRFY-80		50	80	22	Y180M-2	30	Y200L1-2	45	Y225M-2	25	20	3	Y100L2-4	4	Y112M-4	5.5	Y132S-4
	A	46.8	70	18.5	Y160L-2	22	Y180M-2	30	Y200L1-2	23.4	17.6	3	Y100L2-4	4	Y112M-4	5.5	Y132S-4
	B	44	62.2	15	Y160M2-2												
100DRFY-20		100	20	11	Y160M1-2	11	Y160M1-2	15	Y160M2-2	50	5	1.5	Y90L-4	2.2	Y100L1-4	3	Y100L2-4
	A	91.8	16.8	7.5	Y132M2-2			11	Y160M1-2	45.4	4.1	1.1	Y90S-4	1.5	Y90L-4	2.2	Y100L1-4
100DRFY-32		100	32	15	Y180M2-2	18.5	Y160L-2	22	Y180M-2	50	8	2.2	Y100L1-4	3	Y100L2-4	4	Y112M-4
	A	91	26.5	11	Y160M2-2	15	Y160M2-2	18.5	Y160L-2	45.5	6.6	1.5	Y90L-4	2.2	Y100L1-4	3	Y100L2-4
100DRFY-50		100	50	22	Y180M2-2	30	Y200L1-2	37	Y200L2-2	50	12.5	4	Y112M-4	4	Y112M-4	5.5	Y132S-4
	A	91	40.5	18.5	Y160L-2	22	Y180M-2	30	Y200L1-2	45.5	10.3	3	Y100L2-4	3	Y100L2-4	4	Y112M-4
100DRFY-80		100	80	45	Y225M-2	45	Y225M-	75	280S-2	50	20	5.5	Y132S-	7.5	Y132S-	11	Y160M-4

							2						4		4		
	A	93. 5	70	37	Y200L2-2				55	Y250M-2	45. 5	17. 4	4	Y112M-4	5. 5	Y132S-4	7. 5
	B	87. 8	61. 7	30	Y200L1-2		37	Y200L2-2	45	Y225M-2	43	15					
125DRFY-12.5										100	12. 5	5. 5	Y132S-2	7. 5	Y132S-4	11	Y160M-4
	A									91	10. 3			5. 5	Y132S-4	7. 5	Y132M-4
125DRFY-20										100	20	11	Y160M-4				
	A									91	16. 5	7. 5	Y132M-4	11	Y160M-4	15	Y160L-4
125DRFY-32										100	32	18. 5	Y180M-4	22	Y180L-4	30	Y200L-4
	A									91	25. 5	15	Y160M-4	18. 5	Y180M-4	30	Y200L-4
125DRFY-50										100	50	30	Y200L-4	37	Y225S-4	55	Y250M-4
	A									91	41			30	Y200L-4	45	Y225M-4
150DRFY-20										200	20	18. 5	Y180M-4	22	Y180L-4	30	Y200L-4
	A									182	16. 5	15	Y160L-4	18. 5	Y180M-4	30	Y200L-4

Washing Method

Introduce the clean liquid washing plain bearing to guarantee the pump rotate safety. Two methods can be selected to the different medium.

Self-washing

When the medium conveyed by the pump is clean, adopt this method to carry out the washing. Lead a pipeline from the pump outlet flange, make the washing liquid flow to various plain bearings, lubricate the plain bearing, bring the heat produced by friction and play a temperature dropping function.

Out -washing

When the medium conveyed by the pump contains the small grain, adopt this method to carry out the washing. Connect a pipeline from the exterior, lead the clean washing liquid to wash the various plain bearings, lubricate the plain bearing, bring the heat produced by friction set, play a temperature dropping function, meanwhile, avoid the solid grain entering the friction set.

Installation

1. After installing the pump, check whether the coupling runs flexibly and check whether there are some metal friction sounds.
2. Check the concentricity of the pump shaft and motor shaft. The difference on the outer round of the two couplings can't exceed 0.3mm.
3. The bearing bush should soak into the liquid. Otherwise you should lead to appropriate liquid from the self-outlet pipeline(or joint from the outside), lubricate bearing bush and prevent the dry mill damaging.
4. In chemical process system, if there are some odds to drop into the container, in order to prevent the odds from damaging the pump body, you can install a proper conservancy trash-rack at the suck pipe place.
5. The distance from the pump suck entrance to the bottom of the container is 1.5-2 times of the suck bore. Four rounds can't be less 2.5 times. The small bore gets the large value and large bore gets the small value.
6. The liquid-out pipeline of the pump should separately set up the support frame and its weight can't be allowed to add the pump outlet flange.
7. After finishing installation, check whether the nuts of all parts are tightened and then install the pump and motor on the container after the coupling runs flexibly. After installation, check it again.

Start and Stop

1. Check the bearing cavity and let it keep a ration clean butter. Usually it's appropriate to fill with the empty cavity capacity $1/2 \sim 1/3$, avoid the bearing temperature rising while running.
2. Check whether the coupling is even on weight, otherwise you should find out the reason and get rid of it and then run it.
3. If adopting the exterior washing lubricating bearing bush, before starting the motor, lead the exterior liquid to wash the bearing bush.
4. Check the motor running direction and left it same as the ruled rotary direction of pump.
5. Close the gate valve and pressure meter on the outlet pipeline.
6. First start the motor and then open the pressure meter, slowly open the gate valve on the outlet pipeline to the desired position and then put into the normal running .

7. Normally stop, first close the outlet gate valve slowly and then stop the motor and close the pressure meter.
8. Stop or no use for long time, please remove the pump from the container, clean, reassemble and add oil to be stored.

Running

- 1、The bearing temperature can't be high 80℃ and there should be appropriate butter in bearing box.
- 2、Keep and guarantee the butter pure and clean at any time.
- 3、Stop machine and carry out the check if finding the following breakdowns in the course of running.

Possible factors of fault, Cause of the fault and Solving methods

Possible factors of fault	Cause of the fault	Solving methods
1、The pump can't give liquid	a.The motor running direction is not correct. B.The close impeller flow channel or suction and outlet Pipeline are blocked c.The liquid hasn't soaked the impeller central shaft	a.Correct the direction. b.Remove the block part c.Adjust the soak height
2、The pump has insufficient flux	a.The impeller is corrosive seriously b.The speed is insufficient c.Suction or outlet part are blocked	a.Replace the impeller b.Increase the speed c.Remove the block part
3、The pump total head is insufficient	a.The conveyed liquid contains gas b.The impeller is corrosive seriously c.The speed is insufficient	A.Reduce the liquid temperature and expel the gas B.Replace the impeller C.Increase the speed
4、The power is too large	a.The flux exceeds the using range b.The medium specific gravity is too large c.Mechanical friction d.The bearing bush dry mill or lubrication liquid is insufficient	A.Running according to the pump using range B.Replace the large power motor C.Check the friction reason and solve it D.Soak the bearing bush liquid

5、 The bearing is hot	a.The pump shaft and motor shaft are not concentric b.Lack of grease or the grease is bad in Bearing box c.Shaft vibration is too large	a.Adjust the concentricity b.Add grease or replace it c.Replace bearing
6/Noise and vibration	a.The pump shaft and motor shaft is not concentric b.The conveyed liquid contains gas c.The rotor is unbalance d.The bearing bush and shaft sleeve are damaged e.The nut is loosen	a.Adjust the concentricity b.Reduce the liquid temperature and expel the gas c.Replace the parts d.Replace the bearing bush and repair the shaft sleeve e.Lock various nuts