FIRST PUMP

Product Manual



QFB-Fluorine alloy centrifugal pump

—Professional quality,international standards

Directory

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Summary

According to international standards, overflowing parts are all lined with fluorine plastics, and the load bearing part of the pump is metal material. Equipped with external bellows mechanical seal, grinding mater -ials: aluminumoxide vs tetrafluorine, silicon carbide vs tetrafluorine, cemented carbide vs cemented carbide cemented carbide, users can choose according to the requirements of the abrasive surface.

Use

Suitable for conveying strong corrosive liquid.For example:hydrochloric acid,nitric acid,organic solvents.

Model meaning

50 QFB-30 L

50	Inlet diameter:50mm
QF	Fluoroplastic alloy
B	Single stage single suction cantilever centrifugal pump
30	Head:30m
L	Long support type

Installation height calculation

In selecting the pump in our company,the instal -lation height should be considered.The vertical dist -ance between the suction level and the pump shaft should be less than the installation height specified by the pump.The following formula is used to calculate:

Hsz≤Ha-Hv-△Hs-(NPSH)r

Hsz—Fixed installation height(m)

Ha—Atmospheric pressure head on site

Hv—Vaporization pressure head of liquid temperature(m)

△Hs—Suction pipe loss head(m)

NPSH—Cavitation allowance specified on the performance parameter table(m)



QFB FLuorine centrifugal pump

Pump shaft power

Pump power refers to the input power of the pump, is N.

The output power is the effective power transferred by the pump to the liquid as it passes through the pump.

is NE.

Ne=p×g×Q×H

Ne=Shaft power(W)

p=Liquid density(m^2/kg)

g=Gravity acceleration(m/s)

Q=Flow(m^3/h)

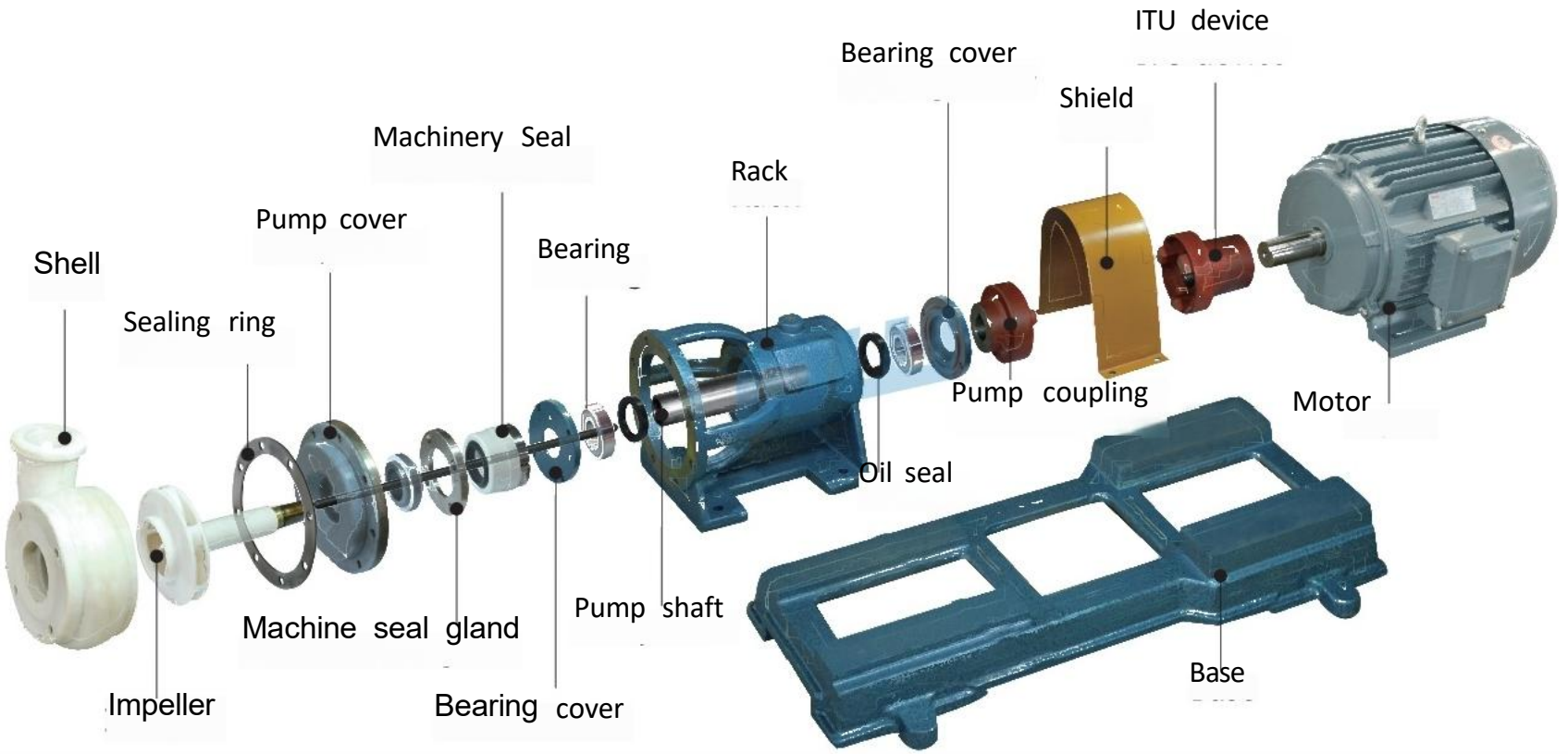
H=Head(m)

Input power and output power are not equal,bec -ause there is a loss of power in the pump,the size of the loss is commonly used to measure the efficiency of the pump.Efficiency is expressed by n.The eficiency

of pump is the ratio of output power to input power.

$$\eta = \frac{Ne}{N}$$

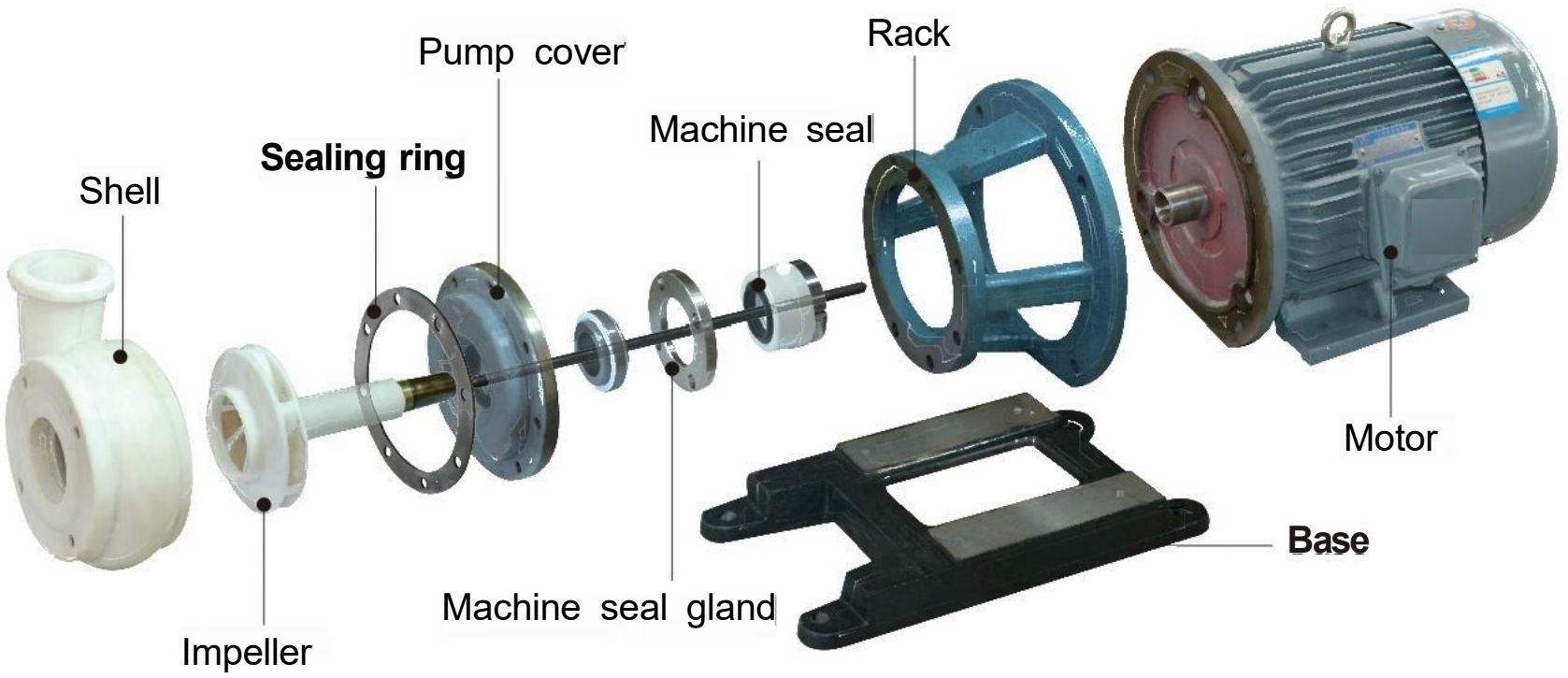
Part disassembly drawing



Figurel **QFB-L-Long support type**

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Part disassembly drawing



FigureI **QFB-D-**Short support type

Material diagram

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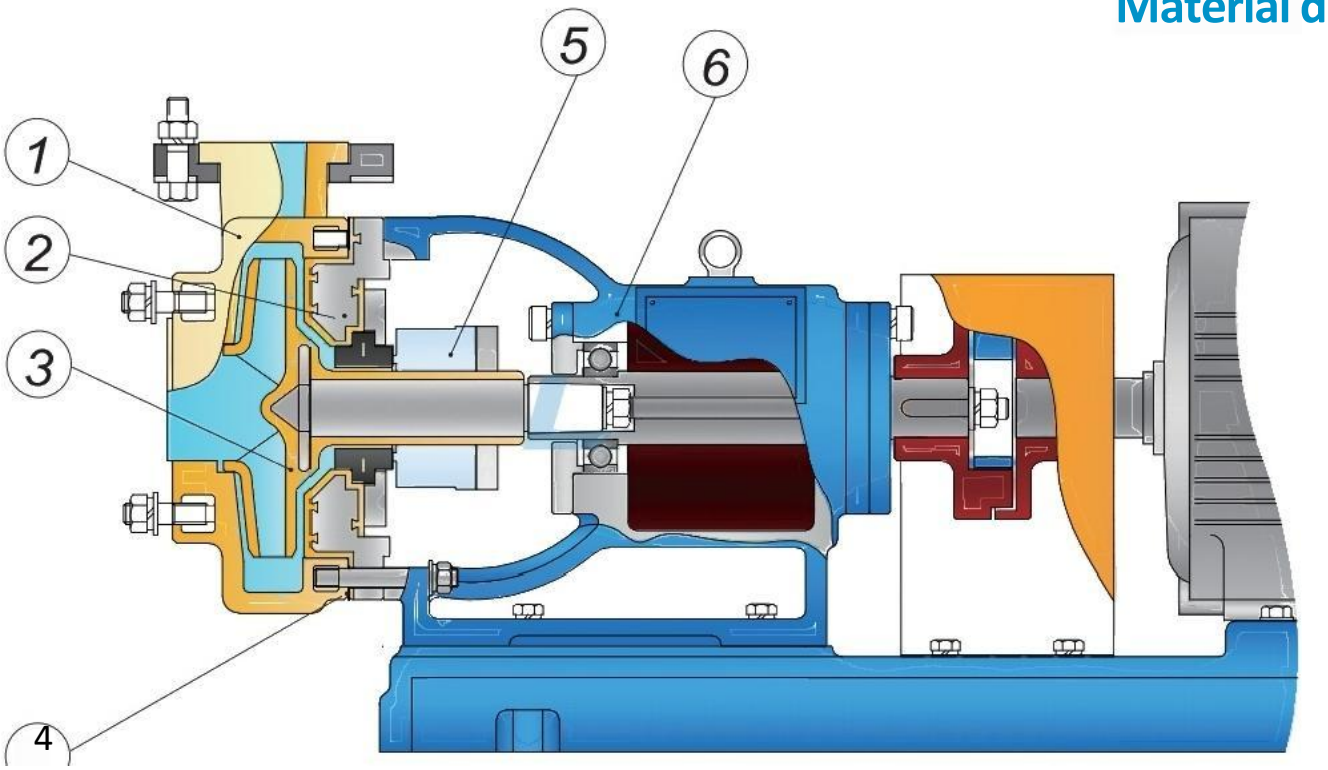


Figure I QFB-L-Long support type

NO.	Name	Material	NO.	Name	Material
1	Pump body	Fluoroplastic alloy	4	Sealing ring	Machine seal
2	Pump cover	HT200 lining F46	5	Machine seal	WB2
3	Impeller	Fluoroplastic alloy	6	Rack	HT200

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Material diagram

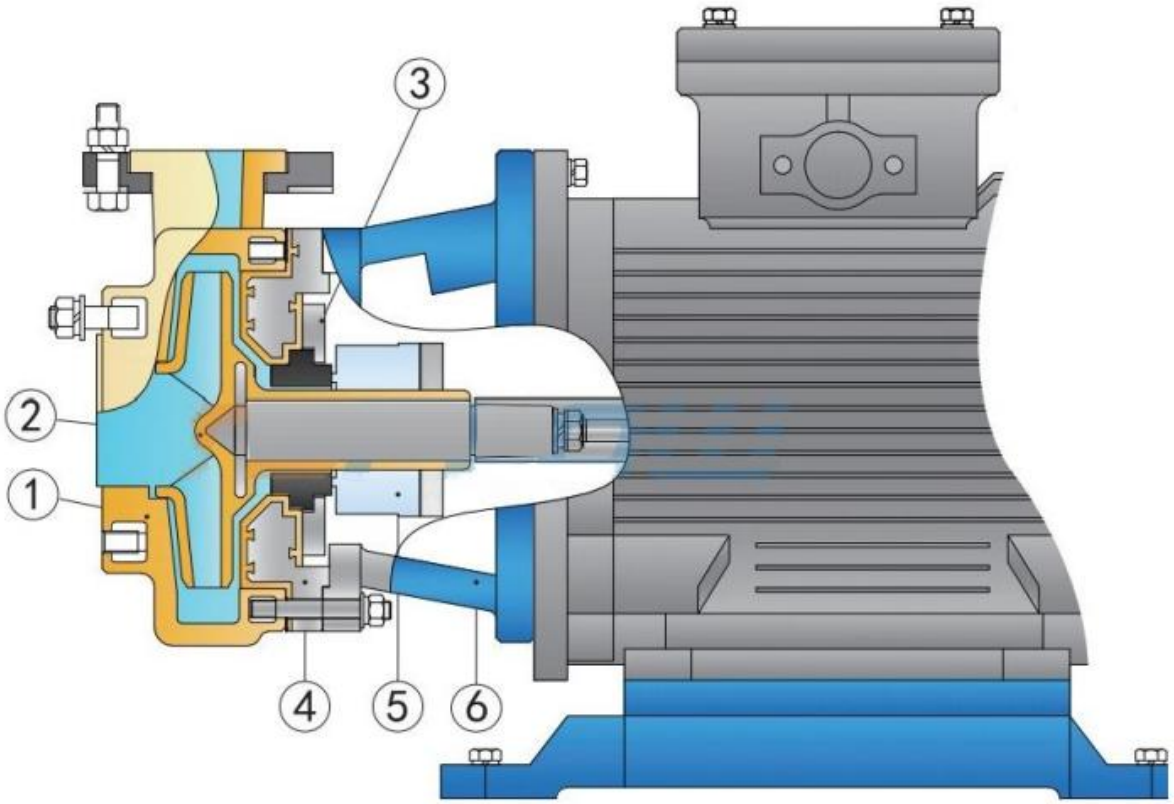
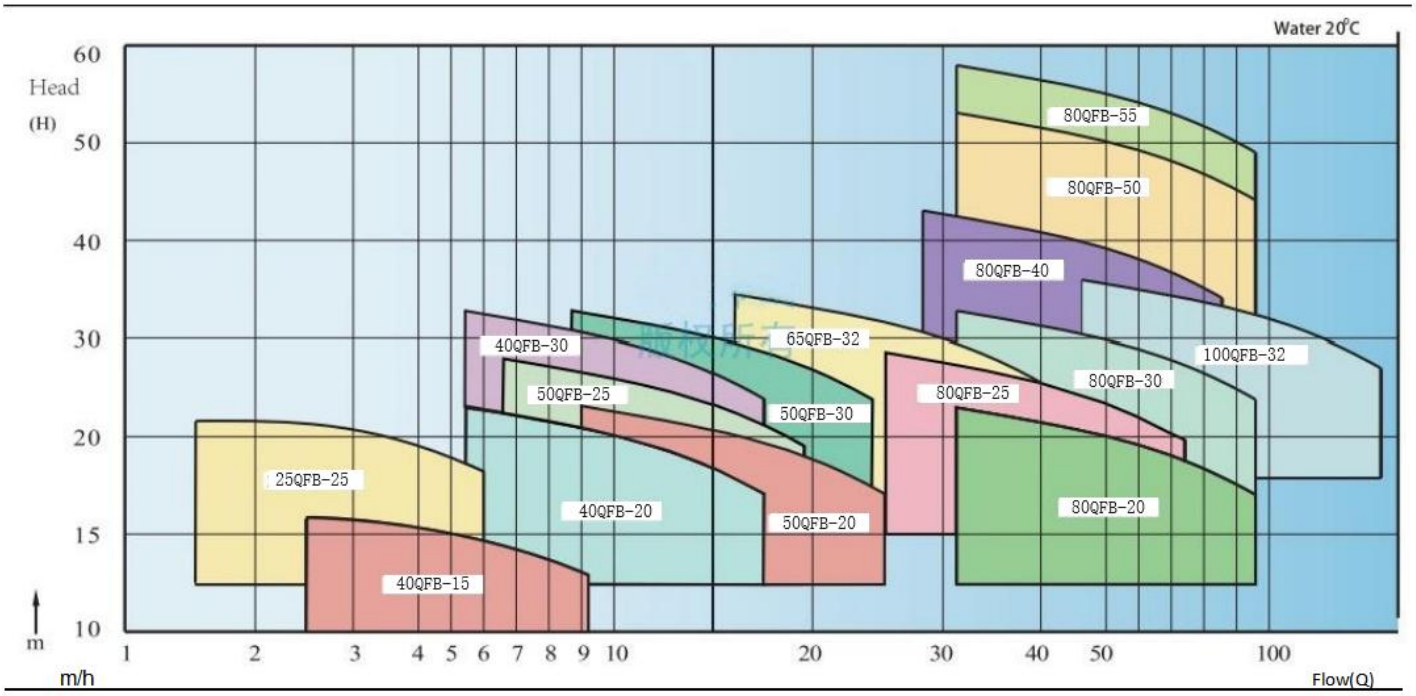


Figure Ⅱ QFB-D-Long support type

NO.	Name	Material	NO.	Name	Material
1	Pump shell	Fluoroplastic alloy	4	Pump cover	TH200 Lining F46
2	Impeller	Fluoroplastic alloy	5	Machine seal	WB2
3	Machine seal gland	304	6	Rack	HT200

Performance curve

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Performance parameters

Table 1

NO.	Type	Flow	Head	EFF	NPSH	Aperture	Speed	Power	Weight
NO.	Type	m^3/h	m	%	m	mm	r/min	kw	kg
1	25QFB-25L	3.6	25	30	3.0	25×25	2900	1.5	48
2	40QFB-15L	5	15	45	3.0	40×32	2900	3	75
3	40QFB-20I	10	20	42	3.0	40×32	2900	3	75
4	40QFB-30L	10	30	36	3.0	40×32	2900	3	75
5	50QFB-20L	12.5	20	52	3.0	50×32	2900	3	75
6	50QFB-25L	12.5	25	48	3.0	50×32	2900	3	75
7	50QFB-30L	12.5	30	46	5.0	50×32	2900	3	75
8	65QFB-32L	25	32	56	3.5	65×50	2900	5.5	125
9	80QFB-20L	50	20	65	3.5	80×65	2900	5.5	125
10	80QFB-25L	50	25	64	3.5	80×65	2900	7.5	130
11	80QFB-30L	50	30	64	3.5	80×65	2900	7.5	130
12	80QFB-40L	45	40	63	3.5	80×65	2900	11	210
13	80QFB-50L	50	50	63	3.5	80×65	2900	15	208
14	100QFB-32L	100	32	70	3.5	100×80	2900	15	250

We can change the data by improving the impeller and ask us if necessary.

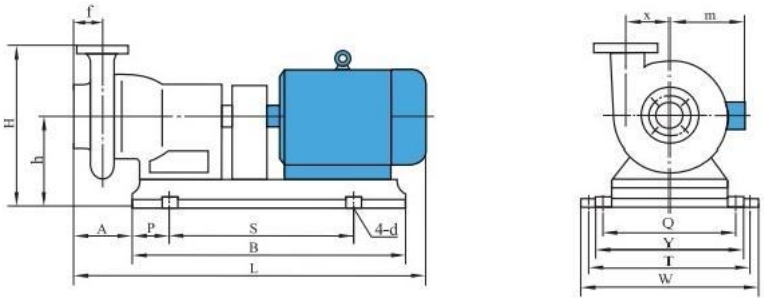
Table Ⅱ

NO.	Type	Flow	Head	EFF	NPSH	Aperture	Speed	Power	Weight
NO.	Type	m³/h	m	%	m	mm	r/min	kw	kg
1	25QFB-25D	3.6	25	30	3.0	25×25	2900	3	48
2	40QFB-15D	5	15	45	3.0	40×32	2900	3	75
3	40QFB-20D	10	20	42	3.0	40×32	2900	3	75
4	40QFB-30D	10	30	36	3.0	40×32	2900	3	75
5	50QFB-20D	12.5	20	52	3.0	50×32	2900	3	75
6	50QFB-25D	12.5	25	48	3.0	50×32	2900	3	75
7	50QFB-30D	12.5	30	46	5.0	50×32	2900	3	75
8	65QFB-32D	25	32	56	3.5	65×50	2900	5.5	125
9	80QFB-20D	50	20	65	3.5	80×65	2900	5.5	125
10	80QFB-25D	50	25	64	3.5	80×65	2900	7.5	130
11	80QFB-30D	50	30	64	3.5	80×65	2900	7.5	130
12	100QFB-32D	100	32	70	3.5	100×80	2900	15	250

We can change the data by improving the impeller and ask us if necessary.

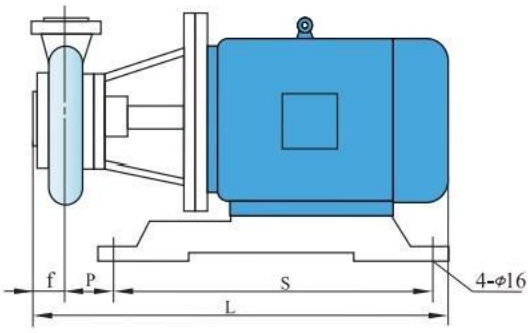
Mounting size

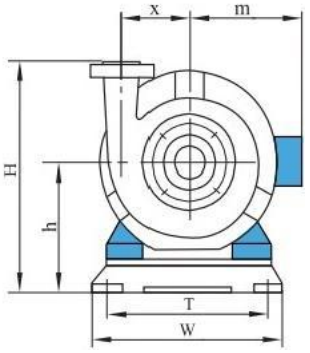
QFB-Long support type



NO.	Type	Mounting size														
		L	B	S	P	A	W	T	Y	Q	H	h	f	X	m	4-ad
1	25QFB-25	700	590	440	75	80	280	240	280	240	257	162	40	77	150	4-016
2	40QFB-15	786	615	455	80	107	335	285	280	250	287	162	58	82	180	4-016
3	40QFB-20	786	615	455	80	107	335	285	280	250	287	162	58	82	180	4-016
4	40QFB-30	786	615	455	80	107	335	285	280	250	287	162	58	82	180	4-016
5	50QFB-20	786	615	455	80	107	335	285	280	250	287	162	58	82	180	4-016
6	50QFB-25	786	615	455	80	107	335	285	280	250	287	162	58	82	180	4-016
7	50QFB-30	786	615	455	80	107	335	285	280	250	287	162	58	82	180	4-016
8	65QFB-32	940	725	480	130	142	370	330	290	250	347	197	74	95	210	4-016
9	80QFB-20	980	725	480	130	142	370	330	290	250	347	197	74	95	210	4-016
10	80QFB-25	980	725	480	130	142	370	330	290	250	347	197	74	95	210	4-016
11	80QFB-30	980	710	480	125	142	365	330	285	250	347	197	74	95	210	4-016
12	80QFB-40	1200	920	660	124	142	430	390	350	300	410	230	85	118	265	4-016
13	80QFB-50	1210	920	660	124	142	430	390	340	300	410	230	85	118	265	4-016
14	80QFB-55	1255	920	660	124	142	430	390	340	300	410	230	85	118	265	4-016
15	100QFB-32	1180	1130	720	205	142	485	435	485	435	500	280	100	118	265	4-024

QFB CENTRIFUGAL PUMP





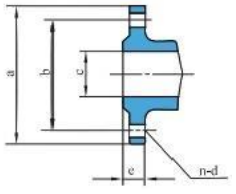
QFB(D)-Short support type

	Type	Mounting size									
		L	S	P	f	W	T	H	h	x	m
1	40QFB-15(D)	500	310	150	40	220	170	260	140	85	180
2	40QFB-20(D)	500	310	150	40	220	170	260	140	85	180
3	40QFB-30(D)	500	310	150	40	220	170	260	140	85	180
4	50QFB-20(D)	480	310	150	45	220	170	260	140	82	180
5	50QFB-25(D)	480	310	150	45	220	170	260	140	82	180
6	50QFB-30(D)	480	310	150	58	220	170	260	140	82	180
7	65QFB-32(D)	660	330	140	60	290	240	327	177	95	210
8	80QFB-20(D)	660	330	140	60	290	240	327	177	95	210
9	80QFB-25(D)	660	330	140	60	290	240	327	177	95	210
10	80QFB-30(D)	660	330	140	60	290	240	327	177	95	210

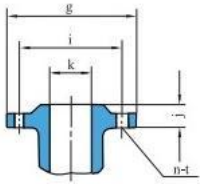
Flange dimension

	Type	Inlet flange					Outlet flange				
		C	a	b	e	n-od	K	g			n-o t
1	25QFB-25	25	120	85	18	4-011.5	20	110	75	18	4-011.5
2	40QFB-15(D)	40	140	110	18	4-011.5	32	140	100	18	4-011.5
3	40QFB-20(D)	40	140	110	18	4-011.5	32	140	100	18	4-o11.5
4	40QFB-30(D)	40	140	110	18	4-×11.5	32	140	100	18	4-011.5
5	50QFB-20(D)	50	150	125	18	4-011.5	32	140	100	18	4-011.5
6	50QFB-25(D)	50	150	125	18	4-011.5	32	140	100	18	4-011.5
7	50QFB-30(D)	50	150	125	18	4-@11.5	32	140	100	18	4-011.5
8	65QFB-32(D)	65	185	145	18	4-014	50	165	125	18	4-012
9	80QFB-25(D)	80	200	160	18	4-014	65	180	145	22	4-012
10	80QFB-30(D)	80	200	160	18	4-M12	65	180	145	22	4-013
11	80QFB-40	80	200	160	18	4-016	50	165	125	20	4-017.5
12	80QFB-50	80	200	160	18	4-017.5	50	165	125	20	4-017.5
13	80QFB-55	80	200	160	20	4-017.5	50	170	125	20	4-017.5
14	100QFB-32	100	220	180	25	8-M16	80	200	165	25	4-M16

Inlet flange



Outlet flange



Technical characteristics

Mechanical seals:

Moving ring:use Tetrafluorine filled carbon fiber material,can choose ceramic,silicon carbide,pressureless sintered silicon carbide.Static ring:use silicon carbide,ceramics,pressureless sintering silicon carbide,etc.

Impeller:

The impeller is made by integral moulding,and the steel insert is wrapped in fluoroplastic to ensure the strength of the impeller

Bearing:

Bearing adopts 2RS double groove ball grease lubricating type,no need to add lubricating oil at later stage.

Use attention

1.Ferromagnetic impurity and hard impurity are not allowed in the medium transported by fluorine-lined centrifugal pump.Otherwise,magnetic filters are required.It is not suitable to transportalarge number ofcrystalline media.

2.The fluorine-lined centrifugal pump is not allowed to operate at a rated flow rate ofless than 30%.

3.For the delivery of density greater than 1200kg/m'liquid,we need to inform our sales department,motor power needs to be appropriately increased.

4.The maximum working pressure of mechanical seal is 1.0 MPA,beyond which a mechanical seal thrust ring is required.

5.Prevent static electricity:when conveying liquid with low conductivity,such as ultra-pure water or fluorine-contain -ing inert liquid,it will produce static electricity and cause discharge and pump damage,so antistatic measures should be taken

6.Special medium selection of special grinding parts,such as hydrofluoric acid selection pressureless sintering silicon carbide,nitric acid choice ceramic or silicon carbide.

Installation instructions

1.Build the concrete foundation according to the size,at the same time bury the anchor bolt.

2.The pump group should be checked before installation.All parts are intact and there is no sundries in the pump cavity.

3.Put the pump unit on the basis,put a pair of wedge cushion between the bottom plate and the foundation,by adjust -ing the wedge pad,find the level.

4.The inlet and outlet lines of the pump should be supported separately by support support.

5.After installation,the coupling is rotated with bare hands to check whether there are any phenomena such as rubbing and running,so that it can rotate easily and freely.

6.In order to prevent sundries from entering the pump,we recommend the installation of filters,the filter area should be more than 2-3 times of the pipeline cross section area.

7.The pump with high lift should be installed with reverse stop valve on the outlet line to prevent damage caused by sudden shutdown.

8.The installation height of the pump must be in line with the cavitation allowance of the pump and the pipeline loss and the temperature of the medium must be taken into account.

Start operation

1.Before opening the equipment,fill the pump cavity with liquid,close the outlet valve,and connect to the power supply.

2.Turn on the power and check the steering of the pump in the direction of the sign.

3.Pump unit trial operation 5-10 minutes,if there is no abnormal phenomenon can be put into operation.

4.When stopping,the outlet valve should be closed first,and then the power supply should be cut off.

Equipment disassembly

1.The pump body is first washed with clear water when disassembled until the corrosive medium in the pump shell is completely clean

2. When replacing parts of pump machine,shall not use sharp object,hard object to hit the pump parts,the removed parts should be light,sealing face facing up.

Maintenance

1.Check pump and motor regularly and replace vulnerable parts.

2.When the long stop is not used,the pump should be cleaned inside the passage and cut off the power supply,cover the dust cover.

3.Turn on the machine in the direction of the sign.Reverse and idling are strictly prohibited.

After-sale service

Provision of spare parts:BBP is able to quickly supply fragile parts and spare parts to ensure that production does not stagnate.

Equipment maintenance:We will guide customers to maintain and maintain equipment,identify weaknesses in time, and maintain them carefully to reduce or even avoid repair costs.

Timely service:Regardless of equipment downtime or malfunction,the customer can contact us at any time,we will make a quick response for you.

Technical support:BBP service,dedicated and meticulous.We will provide consultation for customers,elite after-sales team,advanced service awareness,expert technical guidance,throughout the product design,selection,sales, use of the entire process.

Simple problem solving

Problem description	Cause analysis	Solution
Unextractable medium	1.Air in inlet piping 2.Inlet pipe leakage 3.Liquid shortage in pump cavity 4.Foreign body in inlet pipe 5.Pump equipment steering marking is inconsistent 6.The suction height is too high	1.Recharge/exhaust 2.Is the inlet pipe damaged 3.Increased injection of liquid 4.Check the pipeline for foreign bodies 5.Adjusting the steering of pump equipment 6.Lower installation height
Flow,head insufficiency	1.There is foreign body in the pipeline 2.Motor speed insufficiency 3.Impeller damage	1.Clean up foreign bodies 2.Check motor and circuit 3.Replacement of impeller
Excessive power	1.Medium density is too large 2.The error between pump axis and motor axis is large 3.Mechanical friction	1.Reducing the specific gravity of medium 2.Adjust axis position 3.Carry out overhaul
Pump equipment vibration	1.Big error between pump axis and motor axis 2.High suction,cavitation 3.Mechanical friction	1.Adjust axis position 2.Lower installation height 3.Inspection of wear and tear

Special performance

Name	Description
Electrostatic conductivity	Prevention of fire and explosion caused by static electricity
Double-sided machine seal	Substances that are resistant to high temperature and high solid content
Insulation sleeve	Insulation pump cavity to prevent damage to machine seal
High temperature resistance	Suitable for use between 100 ℃ and 160 ℃
Motor protection	Can cut off the power instantly
Non-standard motor	For special occasions,special requirements
Non-standard flange	You can customize any standard flange

If you have any other requirements,please contact us.

Full service

1.Pre-sale services:Helping customers design.

2.after-sale service:The warranty period is one year.

3.Availability of spare parts.

Easily damaged parts

Name	Explain
Impeller	The easily damaged parts are mainly the matching parts of mechanical seal,the machine seal of centrifugal pump is very important,can improve the service life. Mechanical seal dry grinding,conveying high solid medium,high temperature,high pressure,not installed in place will reduce the service life
Machine seal	
Pump cover	
Machine seal gland	
Tension bolt	

FIRST PUMP

Corrosion resistance table

Chemical resistance ratings: **Chemical resistance ratings**

A Excel lent
B Good
C Fair
X Not recommended
Date not aval lable

1 20℃
2 40℃
3 60℃
4 80℃
100℃
120℃

CHEMICAL	PP	PVDF	PTFE	Stainless steel	FKM	NBR	99 Ceramic	High density carbon
Sul furica Acid 0~10%	A4	A6	A6	B1	A6	B2	A5	A6
Sul furica Acid 10~75%	A3	A3	A6	X	A4	X	A5	A6
Sul furica Acid 75~100%	B2	B1	A4	C1	A4		A5	A4
Nitric Acid 10%	A3	A3	A5	A5	A5	X	A5	A6
Nitric Acid 30%	A2	A3	A6	A5	A6	X	A5	A6
Nitric Acid 50%	B2	A3	A3	A5	A1	X	A5	A5
Hydrochloric Acid 0~25 %	A4	A6	A6	X	A3	B1	A5	A6
Hydrochloric Acid 15~40 %	A4	A6	A6	X	B2	X	A5	A6
Hydrofluoric Acid 10%	B2	A6	A6	X	A3	X		A3
Hydrofluoric Acid 30%	C2	A6	A6	X	A4			A3
Hydrofluoric Acid 60%	X	A5	A6	X	A4			A2
Acetic Acid 20%	A2	A3	A6	B5	B1	B2	A5	
Acetic Acid 80%	B1	A3	A6	B1	X		A5	A4
Souium Hydroxide 20%	A3	A3	A6	B1	B1	B2		A3
Souium Hydroxide 50%	A3	A3	A6	B1	X	B1		A3
Bromine Water	C1	A4	A3	C1	A2		A1	A2
Ethyl Alcohol	A2	A6	A3	B5	A3	X	A3	A5
Acetone	A2	X	A6	A5	X		A3	A5
Freon12	X	A4	A6	B5	A1	X	A4	A4
Aluminum Chloride	A4	A6	A6	X	A5	B4	A4	A5
Ammonia Liquid	A1	A4	A6	A5	C1	B1	A3	A5
Aqua reria	C2	A1	A5	X	B2		A4	
Fornaldehyde	A4	A4	A6	A4	A4	X	A4	A5
Gasoline	X	A6	A6	A5	B3	B3	A4	A6
Kerosene	A1	A6	A6	A5	A1	B1	A4	A6
Methyl alcoho	A3	A6	A6	A5	B2	B4	A5	A6
Toluene	C1	A3	A4	A5	B1		A5	A4
Trichloroethylene	C1	A6	A6	B5	A1		A4	A6
Xylene	X	A3	A6	A5	B1		A5	A5
Nitric acid anhydrous	C1	A3	A3		A1		A5	A2
Oleum	X	X	A6	X	A4		A5	A2
Potassium hydroxide	A4	A3	A6	A1	B1	C2		A6

We are constantly improving the product,we reserve the right to change the data.

No leakage **Maintenance free** **Super corrosion resistance**

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