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VERTICAL STAINLESS STEEL MULTISTAGE  
INLINE CENTRIFUGAL PUMP

# BCDL/BCDLF SERIES

60 HZ



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## Pump

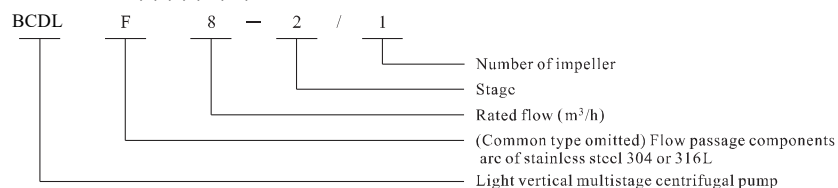
BCDL/BCDLF is a kind of vertical non-self priming multistage centrifugal pump, which is driven by a standard electric motor. The motor output shaft directly connects with the pump shaft through a coupling. The pressure-resistant cylinder and flow passage components are fixed between pump head and inlet & outlet section with stay bolts. The inlet and outlet are located at the pump bottom at the same plane. This kind of pump can be equipped with an intelligent protector to effectively prevent it from dry running, out of phase and overload.

## Motor

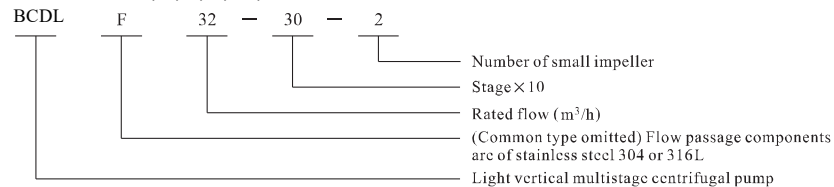
- Full-enclosed air-blast two-pole standard motor
- Protection class: IP55
- Insulation class: F
- Standard voltage: 60Hz: 3 × 200-230 / 346-400V  
3 × 220-255 / 380-440V  
3 × 220-277 / 380-480V

## Definition of Model

BCDL/BCDLF1,2,3,4,8,10,12,15 and 20



BCDL/BCDLF32,42,65,85,120,150 and 200



## Application

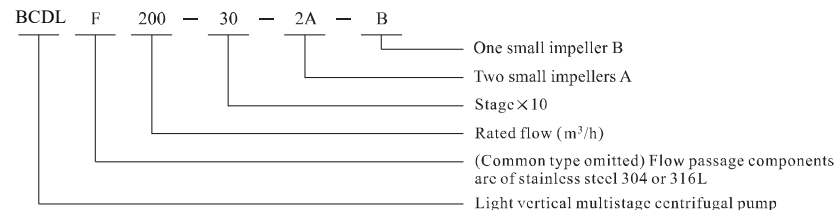
BCDL/BCDLF is a kind of multifunctional product. It can be used to convey various medium from tap water to industrial liquid at different temperature and with different flow rate and pressure. BCDL type is applicable to conveying to non-corrosive liquids, while BCDLF is suitable for slight corrosive liquid.

- Water supply: Water filter and transport in Waterworks, boosting of main pipeline, boosting in high-rise buildings.
- Industrial boosting: Process flow water system, cleaning system, high-pressure washing system, fire fighting system.
- Industrial liquid conveying: Cooling and air-conditioning system, boiler water supply and condensing system, machine-associated purpose, acids and alkali.
- Water treatment: Ultrafiltration system, reverse osmosis system, distillation system, separator, swimming pool.
- Irrigation: Farmland irrigation, spray irrigation, dripping irrigation.

## Operation conditions

- Thin, clean, non-flammable and non-explosive liquid containing no solid granules and fibers.
- Liquid temperature:  
Normal temperature type: -15°C ~ +70°C,  
Hot water type: -15°C ~ +120°C
- Ambient temperature: up to +40°C
- Altitude: up to 1000m

## BCDL/BCDLF200



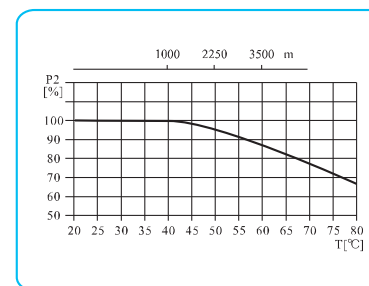
## Max working pressure

Model	Max. pressure(bar)
BCDL1,2,3,4 Flange	25
BCDL(F)1,2,3,4 Over Flange	16
BCDL1,2,3,4 Flange, cutting ferrule joint, pipe thread	25
BCDL8,10,12,15,20 Flange	25
BCDL(F)8 Oval Flange	16
BCDLF8,10,12,15,20 Flange, cutting ferrule joint, pipe thread	25
BCDL32	
32-10-1 ~ 32-60-2	16(30)
32-60 ~ 32-100-2	30
BCDLF32	30
BCDL42	
42-10-1 ~ 42-40-2	16(30)
42-40 ~ 42-60	25(30)
42-70-2 ~ 42-70	30
BCDLF42	
42-10-1 ~ 42-60	25(30)
42-70-2 ~ 42-70	30
BCDL65	
65-10-1 ~ 65-30	16(25)
65-40-2 ~ 65-50-2	25
BCDL85	
85-10-1 ~ 85-30-2	16(25)
85-30-1 ~ 85-40-2	25
BCDLF65,85	25
BCDL, BCDLF120,150,200	20

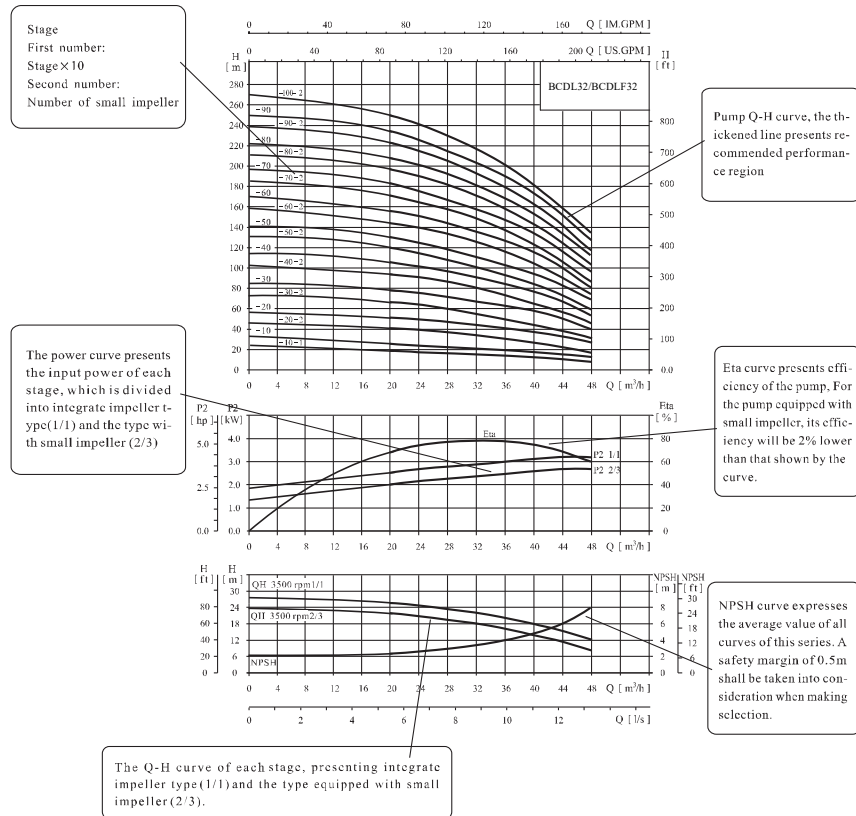
Pumps with pressure inside brackets need to specify especially.

## Max. Ambient temperature

When the pump operates under ambient temperature higher than 40°C or under altitude higher than 1000m, because of low air density and poor cooling effects, the motor output power P2 will be decreased to certain extent. If the pump is operated under the above-said conditions, it should be equipped with motor of higher power.



## Curve illustration



## Performance curve

Following conditions are suitable for the performance curves shown below:

- 1、 All curves are based on the measured values of 60Hz: constant motor speed 3500 rpm or 3540rpm.
- 2、 Curve tolerance in conformity to ISO9906:2012 Grade 3B.
- 3、 Measurement is done with 20°C air-free water, kinematic viscosity of 1mm<sup>2</sup>/sec.

- 4、 The operation of pump shall refer to the performance region indicated by the thickened curve to prevent overheating due to too small flow rate or overload of motor due to too large flow rate.

## Minimum inlet pressure NPSH

In case that the pressure in pump is lower than the steam pressure used to convey liquid, the cavitations will occur. To avoid cavitations, a minimum pressure at the inlet side of the pump shall be guaranteed. The maximum suction stroke can be calculated with following formula:

$$H = P_b \times 10.2 - NPSH - H_f - H_v - H_s$$

$P_b$  = atmosphere pressure [bar]

(can be set as 1bar)

In a closed system,  $P_b$  means system pressure [bar]

NPSH = Net positive suction head [m]

(It can be read out from the point of possible max. flow rate shown on NPSH curve)

$H_f$  = Pipeline loss at the inlet [m]

$H_v$  = Steam pressure [m]

$H_s$  = Safety margin = Minimum 0.5m delivery head

If the calculated result H is positive, the pump may run under the max. Suction stroke H.

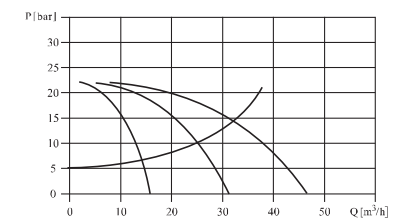
In case the calculated result H is negative, a delivery head of min. Inlet pressure is necessary.

## Operation in parallel

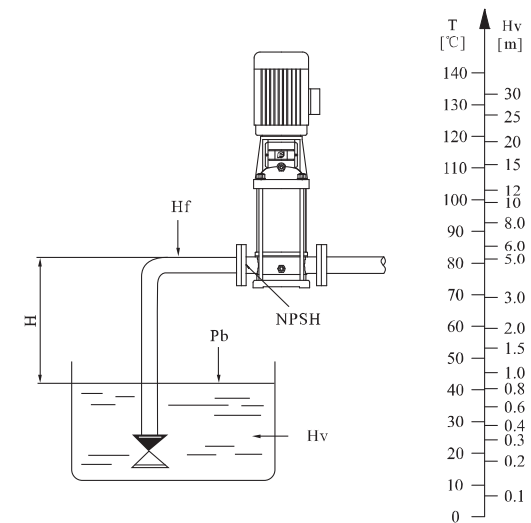
Connecting several pumps in parallel running will benefit much more than running a single large pump.

- Applicable to different working states necessary in a variable flow system.

- Increasing the possibility of water supply when the pump is in failure. Because in case of pump failure, only part of the system flow is effected.

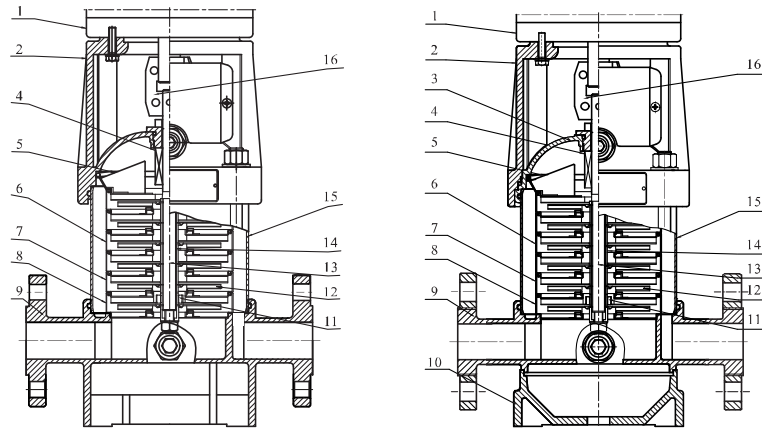


Two pumps or more can be connected in parallel running if necessary.



Check and ensure that the pump is not at cavitations state.

### Section drawings BCDL/BCDLF1,2,3,4



**BCDL**

**BCDLF**

#### Material BCDL/BCDLF1,2,3,4

NO.	Name	Material	AISI/ASTM
1	Motor		
2	Pump head	Cast iron	ASTM25B
4	Mechanical seal		
5	Top diffuser	Stainless steel	AISI304
6	Diffuser	Stainless steel	AISI304
7	Support diffuser	Stainless steel	AISI304
8	Inducer	Stainless steel	AISI304
11	Bearing	Tungsten carbide	
12	Impeller	Stainless steel	AISI304
13	Shaft	Stainless steel	AISI304 AISI316L

NO.	Name	Material	AISI/ASTM
14	Impeller sleeve	Stainless steel	AISI304
15	Cylinder	Stainless steel	AISI304
16	Coupling	Carbon steel	

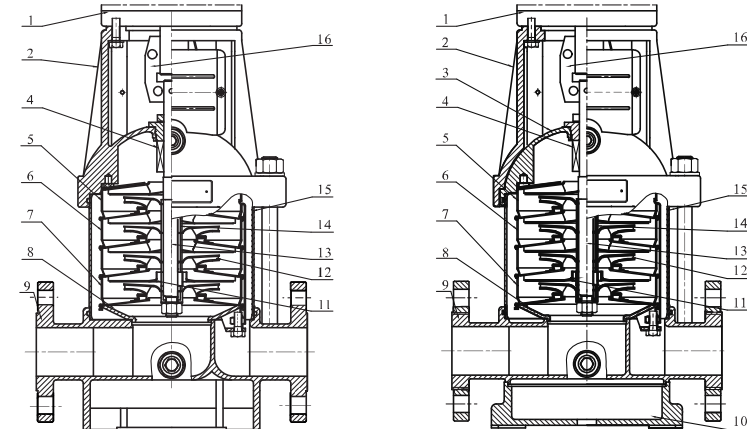
#### BCDLF

3	Seal base	Stainless steel	AISI304
9	Inlet and outlet chamber	Stainless steel	AISI304
10	Base plate	Cast iron	ASTM25B

#### BCDL

9	Inlet and outlet chamber	Cast iron	ASTM25B
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### Section drawings BCDL/BCDLF8,10,12,15,20



**BCDL**

**BCDLF**

#### Material BCDL/BCDLF8,10,12,15,20

NO.	Name	Material	AISI/ASTM
1	Motor		
2	Pump head	Cast iron	ASTM25B
4	Mechanical seal		
5	Top diffuser	Stainless steel	AISI304
6	Diffuser	Stainless steel	AISI304
7	Support diffuser	Stainless steel	AISI304
8	Inducer	Stainless steel	AISI304
11	Bearing	Tungsten carbide	
12	Impeller	Stainless steel	AISI304
13	Shaft	Stainless steel	AISI304 AISI316L

NO.	Name	Material	AISI/ASTM
14	Impeller sleeve	Stainless steel	AISI304
15	Cylinder	Stainless steel	AISI304
16	Coupling	Carbon steel	

#### BCDLF

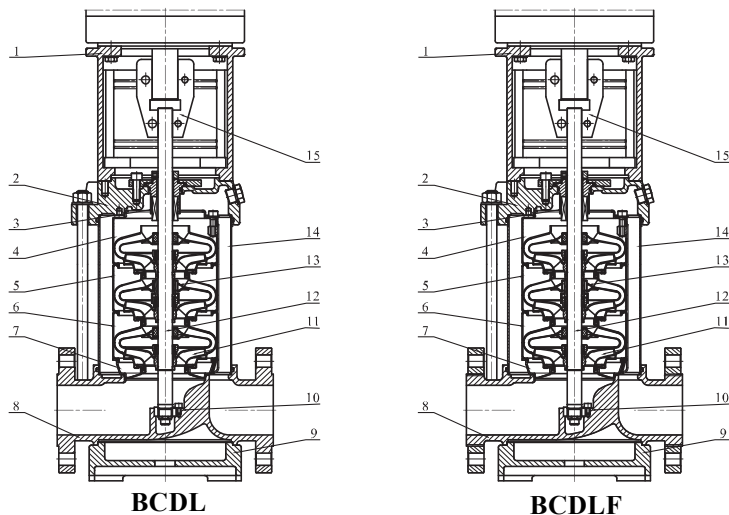
3	Seal base	Stainless steel	AISI304
9	Inlet and outlet chamber	Stainless steel	AISI304
10	Base plate	Cast iron	ASTM25B

#### BCDL

9	Inlet and outlet chamber	Cast iron	ASTM25B
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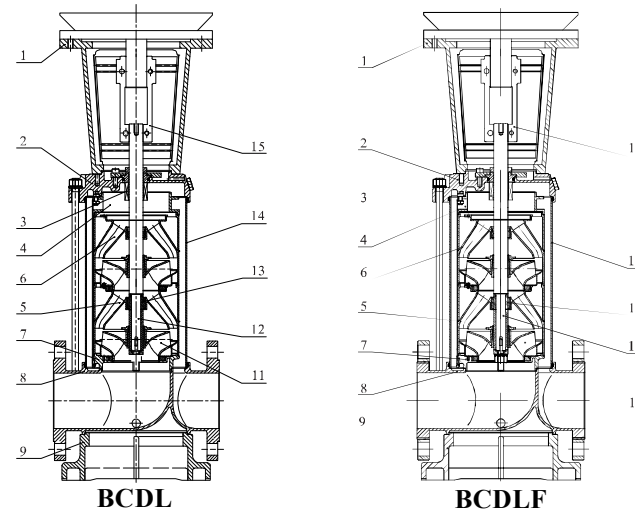
### Section drawings BCDL/BCDLF32,42,65,85



#### Material BCDL/BCDLF32,42,65,85

NO.	Name	Material	AISI/ASTM	NO.	Name	Material	AISI/ASTM
1	Bracket	Cast iron	ASTM25B	12	Shaft	Stainless steel	AISI316L AISI304 AISI431
3	Mechanical seal			13	Intermediate bearing	Tungsten carbide	
4	Top diffuser	Stainless steel	AISI304	14	Cylinder	Stainless steel	AISI304
5	Support diffuser	Stainless steel	AISI304	15	Coupling	Carbon steel	
6	Diffuser	Stainless steel	AISI304		Rubber parts	NBR	
7	Inducer	Stainless steel	AISI304	<b>BCDLF</b>			
9	Base plate	Cast iron	ASTM25B	2	Pump head	Cast iron	ASTM25B
10	Bottom bearing	Tungsten carbide		8	Inlet and outlet chamber	Cast iron	ASTM25B
11	Impeller	Stainless steel	AISI304	<b>BCDL</b>			
				2	Pump head	Stainless steel	AISI304
				8	Inlet and outlet chamber	Stainless steel	AISI304

### Section drawings BCDL/BCDLF120,150,200



#### Material BCDL/BCDLF120,150,200

NO.	Name	Material	AISI/ASTM	NO.	Name	Material	AISI/ASTM
1	Bracket	Cast iron	ASTM25B	13	Bearing	Tungsten carbide	
3	Mechanical seal			14	Cylinder	Stainless steel	AISI304
4	Discharge	Stainless steel	AISI304	15	Coupling	Carbon steel	
5	Support diffuser	Stainless steel	AISI304		Rubber parts	NBR	
6	Diffuser	Stainless steel	AISI304	<b>BCDLF</b>			
7	Inducer	Stainless steel	AISI304	2	Pump head	Cast iron	ASTM 80-55-06
9	Base plate	Cast iron	ASTM 80-55-06	8	Inlet and outlet chamber	Cast iron	ASTM 80-55-06
11	Impeller	Stainless steel	AISI304	<b>BCDL</b>			
12	Shaft	Stainless steel	AISI304	2	Pump head	Stainless steel	AISI304
				8	Inlet and outlet chamber	Stainless steel	AISI304